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MIDDLE EGYPT UTLITIES INSTITUTIONAL STRENGTHENING PROJECT

FINAL REPORT

JUNE, 2005

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FINAL REPORT

Volume I

Middle Egypt Utilities Institutional Strengthening Project

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ACRONYMS AND ABBREVIATIONS

BEGAWS	Beni Suef Economic General Authority for Water and Sanitation (Beni Suef Water Company)
BOD	Board of Directors
CA	Customer Affairs
CAA	Central Accounting Agency
CAOA	Central Agency for Organizational and Administration
COP	Chief of Party
COTR	Contracting Offices Technical Representative
DCOP	Deputy Chief of Party
DT 2	Development Training II (Project)
EDAMS	Utility billing and collection software (EDAMS is a trademark of Hydro-Comp Egypt; it stands for Engineering, Design, Analysis, and Management of Systems)
EGA	Economic General Authority
FEGAWS	Fayoum Economic General Authority for Water and Sanitation (Fayoum Water Company)
GIS	Geographic Information System
GOE	Government of Egypt
GSE	Giza Systems Engineering, the vendor supplying financial software
HPP	High Priority Projects (financed by Master Plan)
ISP	Institutional Strengthening Project
LE	Egyptian Pound
MEGAWS	Minia Economic General Authority for Water and Sanitation (Minia Water Company)
MEUIS	Middle Egypt Utilities Institutional Strengthening (Project)
MIS	Management Information Systems
MOF	Ministry of Finance
OD	Organizational Development
O&M	Operations & Maintenance
PA	Public Awareness
PADCO	Planning and Development Collaborative International (Contractor for MEUIS Project)
PCD	Provincial Cities Development Project

PSP	Private Sector Participation
PT	Piasters
QA/QC	Quality Assurance/Quality Control
RK	Record Keeping
SOP	Standard Operating Procedure
SOW	Scope of Work
UFW	Unaccounted for Water
USAID	United States Agency for International Development
WLR	Water Loss Reduction
WTP	Water Treatment Plant
WWPS	Wastewater Pumping Station
WWTP	Waste Water Treatment Plant
EWRA	Regulatory Agency
WWSPRP	Water/Wastewater Sector Reform Project

EXECUTIVE SUMMARY

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1. INTRODUCTION

Recognizing the importance of the Government of Egypt's (GOE) key goal of providing the population of Egypt with potable water and environmentally sound wastewater services, the United States Agency for International Development (USAID) has financed a number of development projects in Middle Egypt under the auspices of the Egypt Utilities Management Results Package signed in 1997, which covers the Middle Egypt water and wastewater general economic authorities of Beni Suef, Fayoum, and Minia plus the general authority for water in Alexandria. The purpose of these institutional strengthening projects is to produce quantifiable contributions to USAID-Egypt Mission's Special Objective 18: "Access to sustainable utility services in selected Areas increased."

The Middle Egypt Utilities Institutional Strengthening Project (MEUIS), funded by USAID under the results package, aims to assist the newly established water and wastewater economic general authorities responsible for providing services in the three governorates of Beni Suef, Fayoum, and Minia in sustaining commercial operations through achieving three broad objectives:

- Improved cost recovery.
- Improved autonomy and self-sufficiency.
- Improved provision of service to customers.

In 1999, USAID contracted Planning and Development International Collaborative (PADCO) to carry out the Terms of Reference contained in Contract No. 263-C-00-00-00018-00. When the parties signed the contract, its scope was to provide services to the three Middle Egypt economic general authorities. In December 2004, USAID modified PADCO's contract to amend the scope of work by adding support to the utilities in responding to national level sector reform, including conversion to affiliated companies. Subsequently, the GOE issued Presidential Decree No. 135/2004 on April 29, 2004, creating a national water and wastewater holding company and converting 14 economic general authorities, including the three Middle Egypt economic general authorities, into affiliated companies of the holding company.[1]

A. Context of the Middle Egypt Utilities

The three Middle Egypt governorates of Beni Suef, Fayoum, and Minia have an estimated population of 8.7 million of which 21% are living in urban areas. Based on estimates reported in

[1] Also on April 29, 2004, Presidential Decree 136/2004 was issued creating a water and wastewater regulatory agency. However, as of the writing of this report, this agency is not yet operational.

the Middle Egypt utilities corporate plans, the three Middle Egypt companies provide about 93% of the population of Middle Egypt with piped water supply and about 16% with safe wastewater services. Table 1 illustrates these statistics.

Table 1: Middle Egypt Populations and Access to Water and Wastewater Services

Middle Egypt Governorate	Year 2004 Estimated Population*	Percent Urban	Percent of Total Population with Access to Services**			
			Piped Water		Wastewater	
			2002	2005	2002	2005
Beni Suef	2,293,886	23%	97%	99%	8%	10%
Fayoum	2,426,261	22%	98%	97%	25%	25%
Minia	4,023,778	19%	88%	88%	14%	14%
Total	8,7,45,930	21%	93%	93%	16%	16%

* Source: Harza Master Plan estimated based on 1996 census population.
** Source: BEGAWS, FEGAWS, MEGAWS corporate plan monitoring reports.

With the support of MEIUS, the three utilities have introduced modern utility systems that allow them to better service their customers and improve utility operations. Jointly the three utilities serve more than one million customers located in urban and rural areas in the three governorates. Using statistics found in their corporate plans, the three utilities estimate that they have extended potable water and safe wastewater services to 468,000 new customers over the course of the project (FY 2001/2002-FY 2004/2005).

As of FY 04/05, the three utilities are serving 1,082,000 customers meaning that they added more than 468,000 new customers over the course of the project.

B. Innovative Approach to Providing Services

When designing its approach to providing services under the contract, PADCO chose to locate the project's staffs in the three governorates rather than cluster them in Cairo. Thus, the project's staffs have been able to work directly with utility counterparts on a day-to-day basis. Given its closeness to Cairo and the USAID Mission, PADCO chose to locate its head office in Fayoum and established branch offices in Beni Suef and Minia Cities.

As the Middle Egypt utilities' corporate plan mission statements mirror the grant agreement goals, implementing the plans proved to be an ideal vehicle to transfer management of systems developed by the project to the utilities.

Starting in Year 3, MEUIS began transferring responsibility for operating the tools and systems developed by the project to utility's staffs through the development of ambitious, modern utility corporate plans. Using a collaborative approach led by a cross cutting team of MEUIS professionals, the utilities defined mission statements, strategic objectives, and more than 40

program plans covering all aspects of the utilities' operations. Recognizing the central importance of the Result Package's goals, the utilities' mission statements and strategic objectives mirror those of the grant agreement. Thus implementing the corporate plans became an ideal vehicle for also realizing the MEUIS project objectives.

This innovative approach meant that the project strengthened the utilities as a whole, and in doing so, strengthened a cadre of middle management as well. Through the project, the utilities installed sophisticated IT systems. To manage these systems, the project transferred highly trained project IT staffs to the utilities to form the nucleus of IT departments. Finally, with active project support, the utilities contracted private sector companies to provide a wide range of services including septic tank evacuation, vehicle repair, meter installation, IT maintenance and support, hardware maintenance, and various construction services.

2. MAJOR ACCOMPLISHMENTS

During the six years of technical assistance provided by the USAID funded MEUIS project, the Middle Egypt companies made remarkable progress in fully achieving grant agreement goals. The assistance provided by USAID was instrumental in turning the three utilities into solvent operating companies able to plan and implement improved services to more than one million customers. Briefly, they have:

- Converted successfully to affiliated companies of the national holding company, and in their first eight months of operations as affiliated companies produced O&M operating surpluses.
- Installed modern utility management systems including information management systems, computerized revenue systems, computerized financial systems, cost accounting, O&M reporting systems, geographic information systems (GIS), and governorate wide water audits.
- Proved that sound customer service practices result in Middle Egypt customers paying their bills. Consequently, O&M costs are financed by receipts from customers rather than subsides from the Ministry of Finance.
- Demonstrated that sound operating practices can control operating costs permitting them to expand service levels to their customers while meeting national health standards.

A. Conversion to Affiliated Companies

Due to the institutional strengthening that occurred over the first five years of the project, passage of the presidential decree establishing the holding company and 14 affiliated companies was timely as the three Middle Egypt utilities were ready to operate as competitive utilities outside the restrictive structure of the GOE rules and regulations. Registering the three utilities as affiliated companies in March 2005 provides them with an economic, competitive institutional framework

within which to operate. With active support from USAID, the WWSPRP project, MEUIS, and the 14 affiliated companies issued new articles of incorporation and by-laws covering major aspects of their operations; appointed new managing directors; elected and/or appointed boards of directors; and established new organizational structures.

While the impacts of these reforms will only become evident over the coming years, the project leaves the three Middle Egypt companies as financially solvent utilities with competent management and trained staffs capable of meeting future challenges of their new reformed status.

B. High Levels of Cost Recovery Achieved

Through the USAID financed MEUIS project, the three Middle Egypt companies fully achieved the cost recovery targets set by the grant agreement. This achievement is particularly timely as the Ministry of Finance announced the withdrawal of O&M subsidies for the affiliated companies by the end of FY 04/05. The achievement of O&M surpluses without tariff reform places the three Middle Egypt companies well on the road of being financially sustainable.

This accomplishment means that the utilities are financing their water and wastewater services through funds collected from their customers. The fact that these high levels of cost recovery emerged in an environment where the prices of all inputs increased while tariffs remained unchanged is particularly remarkable. To do so, they have put in place sound customer service policies similar to those of any well-operating private sector company. With the project's continuous support, the three utilities controlled costs by embarking on a labor rationalization plan that reduced overall staffing levels. At the same time they rationalized other input costs (chemicals, electricity, etc.), which improved operating efficiency while increasing maintenance expenditures.

C. Modern Utility Systems in Place

During the six years of the project, modern utility systems replaced poorly functioning or non-existent manual systems. For example, automated financial systems replaced manual accounting systems, and state-of-the-art revenue systems replaced systems of manual accounts books that were unable to cope with the demands of a modern utility with an expanding number of customers.

Cost accounting now provides utility managers with the actual costs of operating various systems at functional, geographic, and utility levels. For example, managers now know the costs of providing water services as compared to wastewater services, a basic level of information unavailable at the start of the project. Similarly, through the cost accounting systems and O&M operating procedures, they know the costs of operating different types of treatment facilities. Combining this information with revenues generated from different branches of the utilities,

managers are able to assess net operating revenues of any geographic region serviced by the utilities.

O&M systems including standard operating procedures, record keeping, preventive maintenance, etc., allow all levels of managers (i.e. plant managers, corporate managers, etc.) to monitor plant operations, record production, and respond to problems in operating the systems. Quality control/quality assurance (QC/QA) programs put in place by the project ensure that testing procedures are in place and that water supplied to customers meets GOE health standards.

Water loss reduction programs included the installation of bulk meters in all major treatment plants and key network nodes to monitor actual production. When combined with governorate wide water audits (careful measurement of production combined with actual customer consumption), the utilities were able to reduce unaccounted-for-water (UFW) significantly.

At the start of the project, UFW was above 60% of production. Now it is 35-38% of production and ongoing water audits carried out by utility teams are continuously reducing UFW.

Public awareness programs resulted in religious leaders agreeing to install meters in their facilities and to pay outstanding arrears.

Geographic information systems now cover all major urban networks and some village networks as well. Through the project's support and inputs provided by other donors, GIS units maintain accurate digital maps of their networks and are capable of expanding their digital maps to record physical network changes.

Public Awareness Campaigns encouraged good customer behavior, such as getting legal connections, paying bills on time, and seeking assistance from customer service centers when facing problems. These campaigns succeeded in convincing religious authorities to have their facilities equipped with meters and to pay outstanding arrears, which resulted in a large increase in collections. Similar campaigns directed towards other customer groups resulted in record levels in terms of customer collections, and the continued growth of new customer accounts in particular.

D. Greatly Improved Management

Greatly strengthened management staffs now operate at key levels of the utilities. The project's management training has developed utility management teams' ability to respond to the demands of operating complex utilities, as well as the demands of customer groups and the general public. Key utility systems that streamlined operations support management include:

- Modern management systems such as management information systems (MIS) capable of reporting to the utility and holding company management, and monitoring and evaluation

systems the enable managers to make informed decisions about the problems challenging their utilities.

- Employee performance appraisal systems evaluate performance based on standards set by utility managers, and enable managers to identify and encourage top performers capable of taking on broader responsibilities.

- Streamlined organizational structures clearly identify lines of authority and permit senior managers to delegate tasks to middle and lower level managers. Combined with the functional and job descriptions covering all jobs, managers have the structures in place to operate their utilities efficiently and economically.

3. CHALLENGES AND RECOMMENDATIONS

Middle Egypt's utilities with the support of USAID's financed MEUIS project have gone a long way in transforming from fragmented local administration units into modern, efficient affiliated companies. Major reforms have taken place since 1995 when the GOE established the economic general authorities in the three governorates. These reforms combined with the successful application of the technical assistance provided by MEUIS resulted in the successful, self-financing water and wastewater utilities now found at the end of the project.

These dramatic changes took place in a period of static tariff reforms at the national level. High levels of cost recovery noted earlier resulted from increased efficiency in operating the Middle Egypt utilities, combined with rapidly increasing customer numbers, and locally approved increases to non-tariff charges, such as connection charges and the like. Even with these reforms, the Middle Egypt utilities continue to face several challenges, namely:

Although the Middle Egypt utilities achieved O&M cost recovery, they like the sector face a financial crisis. They cannot continue to expand services without tariff increases.

Continued financial solvency - While MEUIS utilities achieved O&M cost recovery, they will be required as affiliated companies to cover depreciation of assets. Currently, wastewater tariffs are only 35% of water tariffs meaning that increased coverage of wastewater will erode the surpluses the utilities now enjoy. Thus, the utilities, like the sector in general, are facing a financial crisis. They will not be able to recover their costs and continue to expand services without an increase in tariffs. Improved efficiency, alone, is not enough to solve the problem.

Wastewater coverage - As Table 1 shows, wastewater coverage in Middle Egypt is low as the utilities provide only 16% of the population with environmentally sound wastewater services. While USAID and the GOE through NOPWASD are about to complete the construction of several new plants, coverage after handing-over these projects will still be low. A national plan

needs to be developed for financing new infrastructure to replace old plants that have exceeded their useful life span, and for expanding services to meet the growing demand resulted from the continuous population growth.

Qualified personnel in key senior and middle management positions - Despite great efforts over the past 3 years to rationalize staffing, MEUIS utilities continue to be somewhat overstaffed. At the same time, they suffer from the lack of qualified senior and middle management staffs for essential functions such as wastewater, information technology, GIS, hydraulic analysis, master planning, project design, and financial management. In the short-run, hiring private vendors can successfully be done to solve some of these staffing problems. However, the companies still need personnel policies that will permit them to hire key management staffs from the general Egyptian labor market.

Specific detailed recommendations - Chapter 4 expands these recommendations and provides detailed specific recommendations aimed at sustaining and expanding the remarkable accomplishments already achieved by the three Middle Egypt companies during the MEUIS project.

4. LESSONS LEARNED

USAID through its broad institutional strengthening projects has experimented with a variety of approaches to building the capacity of the utilities mainly receiving grant-financed infrastructure from USAID and the GOE. The most successful model appears to be that of locating technical assistance teams directly in the companies being strengthened since both benefit from the day-to-day contact that results.

Now that USAID is withdrawing from direct grant financing of infrastructure and directing its efforts toward the sector as a whole, USAID has the opportunity to lead national discussions addressing the financial issues facing the sector as a whole. These include: developing plans and mechanisms for financing new infrastructure to meet the demands of expanding populations, tariff reforms, and improving the efficiency of the sector as a whole.

The Government of Egypt (GOE) has initiated sector reform through the establishment of the national water and wastewater holding company and its 14 affiliated companies. These steps need to be augmented by ensuring that the nascent Egyptian Water Regulatory Authority is an independent agency capable of addressing tariff issues to ensure the long-term financial solvency of the sector, while protecting the interests of the populations served by the sector's utilities.

CHAPTER 1: INTRODUCTION

CHAPTER 1: INTRODUCTION

Providing safe potable water and environmentally sound wastewater services to the population of Egypt is one of the Government of Egypt's key goals. To assist the GOE in achieving that goal, the United States Agency for International Development (USAID) has financed a number of development projects throughout Egypt, and more specifically in Middle Egypt. In 1997, USAID and the three Middle Egypt utilities of Beni Suef, Fayoum, and Minia signed the Egypt Utilities Management Results Package Grant Agreement[1], which aimed at providing several development projects for improving access to water and wastewater services in the three governorates. The purpose of the Egypt Utilities Management Results Package is to provide quantifiable contributions to USAID-Egypt Mission's Special Objective 18: "Access to sustainable utility services in selected Areas increased."

The Middle Egypt Utilities Institutional Strengthening Project (MEIUS) funded by USAID aimed at assisting the newly established water and wastewater companies responsible for providing services to customers in the three governorates of Beni Suef, Fayoum, and Minia, in sustaining commercial operations through achieving three broad objectives:

- Improved cost recovery.
- Improved autonomy and self-sufficiency.
- Improved provision of services to customers.

In 1999, USAID contracted Planning and Development Collaborative International (PADCO) to carry out the Terms of Reference contained in Contract No. 263-C-00-000018-00. Initially when the contract was signed, it was to provide services to the three economic general authorities serving the three governorates. Anticipating national sector reform in December 2003, USAID modified PADCO's contract to provide support to the utilities in responding to the national level sector reform. In that regard, Presidential Decree 135 issued on April 29, 2004, established a national water and wastewater holding company, and converted 14 general authorities including the three Middle Egypt economic general authorities of Beni Suef, Fayoum, and Minia into affiliated companies of the holding company.

Accordingly, in the final year of the contract FY 2004/2005, PADCO worked closely with the holding company, the 14 affiliated companies, and other governmental bodies to assist the economic general authorities to convert to affiliated companies. The 14 affiliated companies completed the registration process in mid March 2005.

[1] Alexandria was also part of the original Results Package Grant Agreement.

As will be described in this report, the MEUIS project's technical assistance has enabled the three Middle Egypt affiliated companies to be able to participate fully in the reform process. Through the project's efforts, the utilities strengthened all their functions including management, finance, commercial affairs, and utility operations. Indeed as demonstrated in their quarterly management review meetings - an innovation of the project - the three utilities are achieving O&M surpluses. Only two other much larger and older water and wastewater utilities in Egypt have achieved this status.

The Results Package Grant Agreement called for 100% O&M cost recovery of water costs and 50% O&M cost recovery of wastewater costs as major objectives of the package. Throughout the project and this report, the grant agreement defines O&M cost recovery as recovery of operating costs including salaries, raw materials, spare parts and maintenance, and other recurrent annual costs. Full cost recovery includes O&M costs plus depreciation.

As a result of the USAID financed MEUIS project, the three Middle Egypt Utilities have achieved full O&M cost recovery, a remarkable achievement. Only Alexandria Water and Beheira Water Companies achieved that status.

This final report is organized in 4 chapters including this introduction and 3 annexes. An overview of the status of meeting grant agreement goals is presented in Chapter 2. Chapter 3 summarizes the project's main accomplishments. Based on those remarkable accomplishments, Chapter 4 addresses future challenges facing the utilities now as they have converted to affiliated companies of the national water and wastewater holding company, and makes recommendations for sustaining the accomplishments achieved by the three Middle Egypt utilities. Annex 1 shows the final monitoring and evaluation plan results; Annex 2 (Volume II) shows a list of deliverables; and Annex 3 (Volume II) presents the physical actual deliverables stored on CDs.

CHAPTER 2:
UTILITIES MEET GRANT AGREEMENT GOALS

A Customer Service Success Story

Hakeem Maxamous's family is a typical retired couple who live on the husband's pension. The family had water connected a long time ago, however, they were stunned one day with a water bill of L.E. 124. "We are just an old couple...there was no way we could have consumed this amount of water!" complained Mrs. Maxamous.

After filing a complaint with the water company, a technician visited the house to examine the water meter. He decided that the meter was malfunctioning and should be replaced. Within one week, the water company installed a new water meter. Then, the water company deducted the large amount that the couple had paid prior to the installation of the new water meter ftom subsequent water bills saving the old couple a lot of money.

Thankfully, Mr. Maxamous said, "I feel that my rights are now being fulfilled."

CHAPTER 2: UTILITIES MEET GRANT AGREEMENT GOALS

2.1 INTRODUCTION

Remarkable progress was made by the Middle Egypt utilities in achieving the grant agreement goals during the MEUIS project in all aspects of their operations. Chapter 2 provides first the context of the utilities and then highlights their major accomplishments.

2.2 CONTEXT OF THE MIDDLE EGYPT UTILITIES

The Middle Egypt utilities of Beni Suef, Fayoum, and Minia (Figure 2.1) serve an estimated population of 8.7 million of which 21% live in urban areas. Based on estimates reported in the three Middle Egypt utilities' corporate plans in 2005, the three utilities provide about 93% of the population of Middle Egypt with piped water supply and 16% with safe wastewater services. Table 2.1 illustrates these statistics.

With the support of MEIUS, the three companies have introduced modern utility systems to allow them to serve their customers more effectively. Together, the three serve more than one million customers located in urban and rural areas of the three governorates. Over the course of the project, the three utilities added 468,000 customers at an average rate of 78,000 customers per year. In their corporate plans, the three utilities estimate that they provided service for 837,000 additional residents of Middle Egypt since FY 2001/2002.

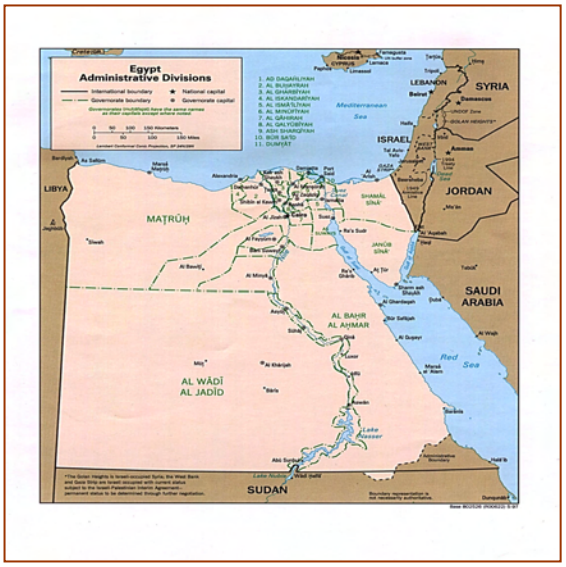


Figure 2.1: Map of Middle Egypt

Table 2.1: Middle Egypt Populations and Access to Services

Middle Egypt Governorate	Year 2005 Estimated Population	Percent Urban	Percent of Total Population with Access to Services***			
			Water		Wastewater	
			2002	*2005*	*2002*	*2005*
Beni Suef	2,293,886	23%	97%	99%	8%	10%
Fayoum	2,426,261	22%	96%	98%	25%	25%
Minia	4,023,778	19%	83%	88%	14%	14%
Totals	8,745,930	21%	90%	93%	16%	16%

2.3 APPROACH TO PROVIDING SERVICES

Unlike previous institutional strengthening projects (ISPs), when designing the approach to providing services for this project, PADCO chose to locate project staffs in the three governorates rather than concentrate them in Cairo. This decision has meant that project staffs have been able to work directly with utility counterparts on a day-to-day basis. Given its closeness to Cairo, thus the USAID mission, PADCO located its head office in Fayoum and established branch offices in Beni Suef and Minia Cities. Since project staffs were working in the entire Middle Egypt governorates, they frequently traveled to the utility branch offices. In fact, support was given to 19 utility branch offices on a regular basis, not just the utility headquarters in governorate capitals.

To manage project staffs covering all functional disciplines of the utilities, project management established a series of project sections mirroring the organization of the utilities. These major sections included: technical affairs (the largest), financial management, customer affairs and metering, information management, organizational development, training, and public awareness.

Initially, the project embarked on a series of pilot projects to test new institutional concepts which proved to be highly successful. Since the third year of the project, the project expanded the pilots to cover the entire service areas of the utilities. For example, all major facilities and most minor facilities now have the O&M systems that project O&M teams piloted in a handful of major facilities at the start of the project. This approach resulted in the provision of uniform services throughout the utilities service areas and meant that utility staffs from all branches also benefited from the services offered by the project.

To fully engage the utilities in implementing project systems, in Year 3 of the project MEUIS embarked on the development of ambitious utility corporate plans similar to the business plans developed by any successful company. A cross cutting core team of professionals from the project worked closely with utility managers to define utility mission statements, strategic objectives, and more than 40 program plans covering all aspects of the utilities' operations. Box 2.1 illustrates the Mission Statement and Strategic Objectives of the Beni Suef Company. The fact that the utilities' mission statements and strategic objectives mirrored those of the grant agreement meant that the corporate plans were an ideal vehicle to implement MEUIS project objectives.

This innovative approach meant that the project strengthened the entire utilities, and in doing so strengthened a cadre of middle management as well. Through the project, the utilities installed sophisticated IT systems. To manage these systems, the project transferred highly trained project IT staffs to the utilities to form the nucleus of skilled IT departments. Finally, with project support, the utilities embarked on engaging private sector providers in a wide range of services

including septic tank evacuation, vehicle repair, meter installation, IT maintenance and support, hardware maintenance, and various construction services.

Box 2.1: Beni Suef Company Mission Statement

Mission Statements	Strategic Objectives
Provide sustainable water and wastewater services, in conformity with standard specifications and environmental laws, to Beni Suef Governorate at an appropriate price. Beni Suef Company achieves this goal through economic operation and constant development of utility activities to gain customer satisfaction and ensure a leading role among similar water and wastewater utilities.	■ ***Service Provision***: Provide sustainable water service to all cities and some main villages according to standards and environmental laws
	■ ***Cost Recovery***: The economic operation of the authority to cover operation and maintenance expenses
	■ ***Administrative Autonomy & Corporate Development***: Adopt modern management systems, with focus on commercialization

2.4 MAJOR ACCOMPLISHMENTS

During the six years of the project, the three utilities with the active support of MEUIS have made remarkable progress in fully achieving the grant agreement goals, and indeed in becoming modern water and wastewater utilities. The assistance provided by USAID has been instrumental in turning the three utilities into solvent operating companies able to plan and implement improved services to more than one million customers. Briefly, they have:

- Converted successfully to affiliated companies and in their first eight months operating as affiliated companies produced O&M operating surpluses.
- Installed modern utility management systems including management information systems (MIS), computerized revenue systems, computerized financial systems, cost accounting, O&M reporting systems, geographic information systems (GIS), and governorate-wide water audits.
- Proved that sound customer service practices resulted in Middle Egypt customers paying their bills and exhibiting a high degree of willingness-to-pay for good water and wastewater services.
- Demonstrated that sound operating practices successfully can control operating costs and permitted them to expand service levels to their customers, while meeting national health standards.

A. Utilities Converted to Affiliated Companies

Building on the institutional strengthening that occurred over the previous five years of the project, the focus of Year 6 was to assist the utilities in converting to affiliated companies of the national water and wastewater holding company. With active support from the project, the three utilities registered as affiliated companies in March 2005, elected and/or nominated new boards of directors, appointed managing directors, and enacted new by-laws. These by-laws covered all main functions of modern water and wastewater utilities including the roles and responsibilities of the boards of directors and senior management, utility financial management, procurement, customer relations, and personnel management.

B. Achieved High Levels of Cost Recovery

By Year 6 of the project, the three Middle Egypt utilities with MEUIS active support fully achieved the cost recovery targets set for them by the grant agreement. This achievement is particularly timely as the Ministry of Finance announced that it is withdrawing O&M subsidies from the affiliated companies by the end of FY 04/05. Thus, having achieved O&M surpluses without tariff reform, places the three Middle Egypt utilities well on the road of being financially self-sufficient.

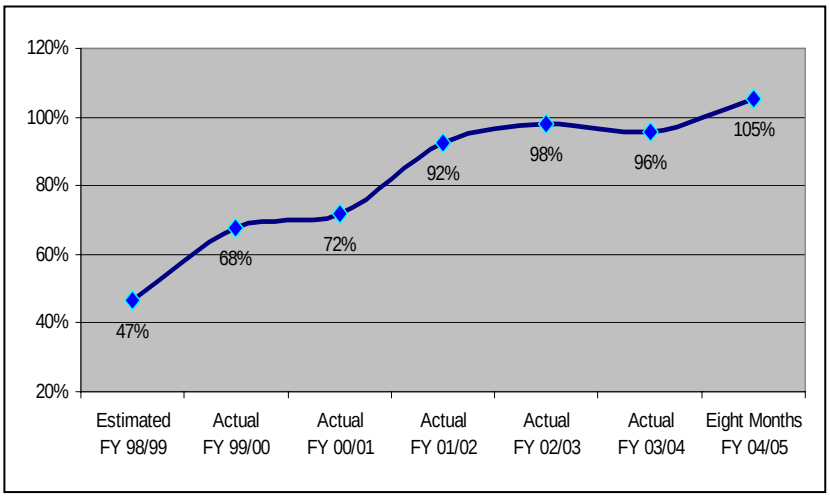


Figure 2.2: Average O&M Cost Recovery of MEUIS Utilities

Although the three utilities have not closed their accounts for FY 04/05, preliminary estimates show that they have achieved total revenues amounting to LE 115 million from services sold to their customers. As Figure 2.2 illustrates, in FY 2004/2005 all three utilities have recorded O&M surpluses. This accomplishment is particularly impressive in that it occurred in an environment where the prices of all inputs increased (salaries, electricity, chemicals, spare parts, etc.), while tariffs remained unchanged. At the start of the project, the three utilities averaged 47% cost recovery.

The three utilities achieved these high levels of cost recovery by aggressively billing customers, thus increasing revenues, and by carefully rationalizing costs. To rationalize costs, all three embarked on labor rationalization that reduced total staffing. At the same time, they rationalized other input costs (chemicals, electricity, etc.), and increased operating efficiency while increasing

maintenance expenditures. As will be discussed later, the results were improved levels of service to Middle Egypt customers in an era that saw rapidly increased cost recovery.

This rosy picture, however, cannot be sustained without tariff restructure. Each of the utilities prepared five-year financial plans with active project support. These plans show that the operating surpluses achieved at the end of the MEIUS project will be eroded, once the utilities take over new treatment plants and expand wastewater service to their customers. This issue will be addressed later in the report in Chapters 3 and 4.

C. Demonstrated High Levels of Willingness to Pay

Achieving high rates of collection was one of the successes of the project. When PADCO started this project, other consultants told us that the willingness to pay for water and wastewater services was very low among religious facilities and government customers. Moreover, small rural customers are unable to pay their water bills

A combination of improved metering, computerized billing systems, improvements in the collection systems to ensure greater accountability of the collectors, plus extensive public awareness campaigns proved that a high degree of willingness-to-pay existed which resulted in the rapid growth in collections. Figure 2.3 illustrates the growth in collection efficiency achieved during the project.

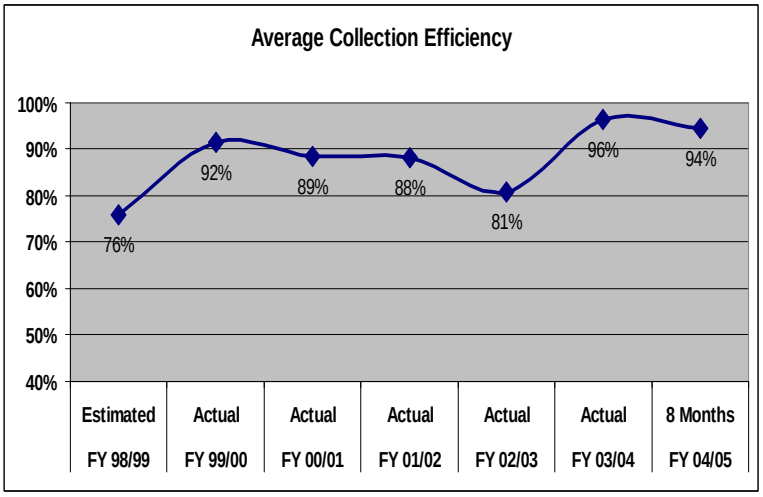


Figure 2.3: Average Collection Efficiency

Public awareness campaigns were a major element in the success realized in collecting from religious customers and government accounts. The utilities sponsored the events and invited the governors and other high officials. During public awareness events, religious leaders and other government officials were shown scientific processes used to treat water to make it safe for human consumption, and then were exposed to the actual costs of treating water and wastewater. As a result, religious customers agreed to have meters installed on their premises and to pay large arrears. Through the project's support, the utilities achieved similar results with government customers.

MEIUS Customer Affairs teams worked with the utilities to expand metering until virtually all customer accounts have meters, and at the same time worked to improve the efficiency of meter

readers and collectors. When combined with printed bills, and the existence of new and modern customer service centers, customers responded through increased payment rates.

D. Greatly Increased Efficiency

Together with MEUIS support, the three utilities achieved high levels of increased efficiency in all areas of their operations. This increased efficiency is evident in the utilities' ability to contain growth in operating costs during a period of rapid expansion of services. To illustrate, over the course of the project, while O&M costs increased by 41% only, and the utilities provided service to more than 55% more customers. Some of the key interventions that improved efficiency include:

- **Greatly improved personnel management systems** that included employee performance appraisal systems, labor rationalization, function and job descriptions covering all major utility activities, and streamlining organizational structures. One major result was the reduction of surplus staffing by 15%.
- **Cost centers efficiently control costs** at all activity, functional, and geographic levels of the utilities. As a result, utility management is now able to track cost performance at all levels of the utilities and are able to use this data to prepare annual performance based budgets.
- **Water audits track unaccounted for water** and now cover all marakez serviced by the three utilities. These water audits uncovered sources of unaccounted for water and reduced UFW to 35% of production from 61% at the start of the project. The net result has been increased customer billing and improved service delivery to customers.

2.5 Greatly Expanded and Improved Service Delivery

Emphasizing customer service as the key to the utilities commercial success, MEUIS worked with the utilities to establish 19 customer service offices throughout their service areas and embarked on a massive metering program to install meters on all customer accounts. Presently, the customer service offices are equipped with state of the art EDAMS revenue systems, a network of computers linked with headquarters through wide area networks, and a complete computerized customer database. When computerization of the database started, manual-billing systems provided only incomplete information on the total number of customers and the status of their accounts. Now, the utilities have up-to-date information on the accounts of more than one million customers. Using these systems, utility customer service staffs are adding more than 60,000 new customers per year to their networks.

Accurate measurement of customer consumption is critical to the financial viability of the utilities and to ensuring customer satisfaction. At the beginning of the project, MEUIS procured and assisted the utilities in installing more than 2,600 high volume customer meters. Currently, high volume customers account for 28% of utility revenues even though they comprise only 6% of the

total number of customers. Subsequently, the project's aggressive metering and water loss reduction programs have assisted the utilities in metering 100% of their customer accounts and in conducting pro-active programs for repairing broken meters. Together, these metering programs resulted in the reduced unaccounted for water noted in the previous section and contributed to the rapid growth in utility revenues. Using USAID financed FARA resources, the utilities are using hand held units (small computers) to record meter readings and collections; hence eliminating data entry errors and reduce faulty readings.

To improve the quality of service provided to existing and new customers, the utilities with the project's active support embarked on an ambitious program for improving plant operations and maintenance including:

- **Improved utility operational procedures** are in place at all filtration plants, compact units, wells, wastewater treatment plants, and pumping stations. These procedures and systems accurately report plant operations, production, and costs; and allow the rationalization of operating inputs, such as eliminating surplus staffs, reducing power costs, and using chemicals more efficiently.
- **Quality control/Quality assurance (QA/QC) programs** are in place in all major water treatment plants, and the newly established central labs are improving the quality of water provided to customers as 97% of the samples routinely taken of water quality meet GOE environmental standards.
- **Water loss reduction programs installed bulk meters on** all major treatment plants and key network nodes meaning that production is accurately recorded. Combined with the water audit noted in the previous section, unaccounted for water was dramatically reduced, resulting in increased revenues and increased availability of potable water to the utilities' customers.
- **Geographic Information Systems cover all major urban networks** and some village networks. Each of the three utilities established a GIS unit capable of maintaining and updating their GIS systems.
- **PA campaigns encouraged customers** to get legal connections and provided service information on where they can get assistance. The campaigns provided information on water conservation and on good customer behavior such as paying bills on time and reporting leaks.

2.6 GREATLY IMPROVED MANAGEMENT

Through the project's activities, management systems were greatly strengthened at key levels of the utilities including:

- Modern management systems such as management information systems (MIS) capable of reporting to the utility and holding company management and monitoring and evaluation

systems able to give utility operators key information needed to make informed decisions and provide assistance to other technical departments of the utilities.

- Employee performance appraisal systems now evaluate employees' performance based on standards set by utility managers, and identify and encourage top performers with capacity to undertake broader responsibilities.
- Streamlined organizational structures which identify lines of authority and delegation of authority to middle managers are now functioning. Job descriptions covering all main jobs have been developed.
- Performance based budgeting utilize cost centers to track costs more accurately and focus expenditures on the critical needs of the utilities.

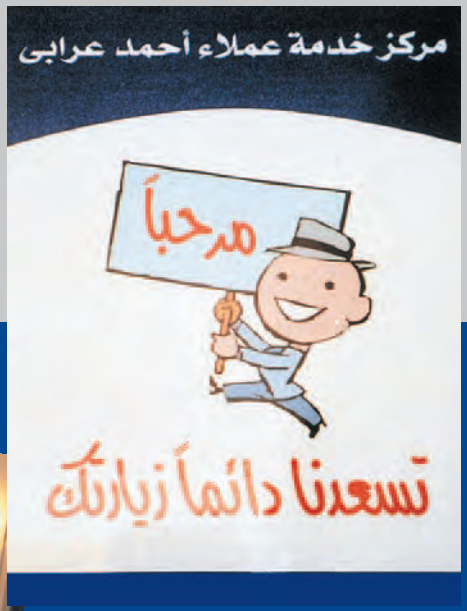
2.7 MIDDLE EGYPT UTILITIES ARE NOW READY TO FUNCTION LIKE SUCCESSFUL COMPANIES

Resulting from the constructive collaboration between the Middle Egypt utilities and the USAID financed MEUIS project, the utilities are now able to take full advantage of their new status as affiliated companies and function like successful enterprises operating in an increasingly competitive environment. To illustrate, the utilities are able to:

- **Plan their futures** as they have prepared and are implementing corporate plans. They have prepared five-year financial plans, and have the basic systems in place to review, update, and implement master plans.
- **Finance capital and operating costs** as illustrated by the O&M surpluses that they are currently generating. This means that the utilities are financing O&M costs from customer revenues and are capable of financing several million pounds of FARA agreements negotiated with USAID.
- **Respond to customer demands** as they are operating customer service centers located throughout their service areas, are billing more than one million customers each billing cycle, and are adding 78,000 new customers per year.
- **Provide high quality services** as they have expanded networks to meet new demands, are preparing to take over more than 30 new treatment facilities financed by USAID and NOPWASD; and are ensuring that water quality meets Ministry of Health and Population standards.

Essentially the three utilities have competent management teams that share a business orientation and are aiming at success in a highly competitive market place. Management teams are supported by trained staffs who have received all basic operational training needed to provide customers with the services they demand. Finally, because of the close collaboration with the project, basic management systems and tools needed to run a modern and efficient utility are in place to support the management teams.

CHAPTER 3:
ACCOMPLISHMENTS AND ACHIEVEMENTS



CHAPTER 3: ACCOMPLISHMENTS AND ACHIEVEMENTS

3.1 INTRODUCTION

As clearly shown in Chapter 2, the Middle Egypt Water Utilities have met and in some areas exceeded the goals of the Grant Agreement. This remarkable progress has been achieved by the solid commitment of the utilities management and staffs to exert all efforts required to convert these utilities from fragmented local administration units into financially independent, and economically viable water companies.

Before the MEUIS project, the utilities as PEAs focused mainly on daily operations and did not have intact corporate direction with mission, visions, strategic objectives and action plans to achieve those objectives. They lacked strategic policies and were dependent fully on the GOE's subsidies to finance their operations.

Revenues were limited, costs were not controlled, utilities were overstaffed, assets were not well managed or maintained, as the utilities lacked basic systems and instruments needed to run efficient water companies.

MEUIS project set an ultimate goal to change this situation and convert these utilities into independent, efficient and effective water companies capable of providing water and wastewater services to the population of Middle Egypt.

Following an assessment phase, the project implemented urgent programs such as metering and water loss reduction followed by the development of corporate plans and action plans. Moreover, the project revisited utilities' structures and modified them to be ready to take charge of the ambitious phase of "implementation" of the corporate plans and action plans.

The commitment of MEUIS utilities' management combined with the joint efforts of the project and the various utilities teams over the past six years facilitated the achievement of the project goals. Today the MEUIS utilities are top performers among the newly formed 14 affiliated water companies having achieved full O&M cost recovery.

Wide application of standard operating procedures (SOPs), preventive maintenance (PM), record keeping and troubleshooting in water and wastewater networks and facilities resulted in rationalization of O&M costs. Water loss reduction (WLR) programs covering all urban areas of the Middle Egypt resulted in reducing non chargeable/unaccounted for water (UFW) from 65% to 38% over the course of the project. Establishment of cost centers and cost accounting functions resulted in monitoring of cost elements and rationalization of operating costs. Preparation and monitoring of performance-based budgets coupled with regular production of financial and income statements allowed management to closely monitor and evaluate the

financial performance of the utilities, and take corrective action to mitigate problems as they emerged. Labor rationalization programs resulted in reduction of labor force and hence operating expenses.

Personnel appraisal, delegation of authority, and simplification of work procedures programs improved the overall efficiency of the operation of the utilities.

Focusing on "customers" and converting utilities into customer oriented companies by establishing customer service centers in 19 urban and rural locations, and launching hundreds of public awareness and customer education events resulted in smooth and positive relations with the customers and increased revenues and collections.

Completion of different computerized systems has had a significant impact on the utilities' functions and performance. Computerized revenue systems (EDAMS) have helped the utilities closely manage and monitor revenues and collections. Oracle Financial and Inventory and Oracle Payroll and Personnel (HRD) systems assisted the three utilities in managing, monitoring and rationalizing costs. The establishment of the Information Technology (IT) departments including establishment and/or enhancement of the Management Information System (MIS) and the Geographical Information System (GIS) meant that planning, monitoring and evaluation functions are strengthened and utilities' performance improved.

The implementation of ambitious Fixed Assets Reimbursement Agreements (FARAs) for procurement of equipment and services funded by USAID totaling LE 45 million provided these utilities with an efficient grant funding mechanism. The FARA program allowed the utilities to successfully complete their newly constructed headquarters with furniture, computers, accessories, and procure essentially needed equipment and services such as bulk meters, large meters, electronic handheld units (HHU) for meter reading and collections, energy saving equipment, and O&M improvement and rehabilitation equipment.

Comprehensive and extensive training to all categories of the utilities' employees coupled with continuous in-house technical assistance and capacity building vastly improved the skills of the employees and hence the performance of the utilities.

Another important factor that contributed to the success of the utilities is the new business approach of "outsourcing" special tasks to the private sector. A wide variety of activities have been outsourced. Most recently the utilities contracted private companies to provide septic tank evacuation and IT management and support.

Finally, the technical assistance and support provided by the project to the utilities during the recent months in drafting basic by-laws and regulations (Personnel, Procurement, Stores, Finance and Customer Affairs), developing new organizational structures and functional descriptions, as

well as training to newly formed Boards of Directors (BOD), smoothed and facilitated their transition to independent affiliated companies.

The following sections of this chapter highlight the accomplishments of the utilities and the project.

3.2 TECHNICAL AFFAIRS

The quality of services delivery is directly related to the performance of the various functions of the technical affairs department of the utilities. Cooperation between the project and the utilities during the course of the project resulted in tremendous improvement of these functions.

Before the project, utilities lacked sound O&M systems and standard procedures. Now, standard operating procedures, routine and preventative maintenance, record keeping and operational reporting have been developed and applied in all water and wastewater facilities. Moreover, digital mapping and databases cover all water and wastewater networks in urban areas. Utilities are routinely implementing maintenance programs for the W/WW networks (flushing, valve exercise, sewer and manhole cleaning). GIS systems provide digital maps of all major water and wastewater systems. Water loss reduction and leak management have greatly reduced unaccounted for water.

Project departments have been strengthened and staffs trained on project management. Quality control/quality assurance (QC/QA) programs are now an essential function of the daily routine operations of the utilities.

Stores and inventory control systems cover a large number of utilities' stores. Occupational safety and health departments have been established and equipped.

The following sections summarize the achievements of the technical affairs tasks.

3.2.1 Operation and Maintenance Systems

a) Facilities SOPs and Record Keeping

All facilities in the three utilities are covered by SOPs, RK and troubleshooting manuals. OJT was provided on operation of water filtration plants and slow sand filters, compact units, wastewater treatment plants and pumping stations. Table 3.1 shows all 372 water and wastewater facilities in the three utilities.

Applying SOPs resulted in achieving the following:

- Improvement of staffs' efficiency.
- Reduced downtime.
- Cost rationalization of chemicals and power.
- Operational reports available to management.

Table 3.1: Total Number of Facilities Covered with O&M Systems

Authority	Water				Wastewater		
	WTP	CU	Wells	Total	WWTP	WWPS	Total
Fayoum	4	21	-	**25**	4	8	**12**
Beni Suef	11	41	45	**97**	1	8	**9**
Minia	8	46	150	**204**	2	23	**25**
Grand Total	**23**	**108**	**195**	**326**	**7**	**39**	**46**

Upgraded compact units were also studied, samples were taken and lab results covering essential parameters were obtained, cost analysis performed and assessment report was prepared. This report indicated that the upgraded units met the MOHP standards and that unit cost was reduced.

Assessment reports of WWTPs evaluated operational problems of these facilities and made recommendations to improve the performance of the plants. In some cases, bid documents were prepared including lists of units that need repairs along with budgetary estimates.

b) Stores and Inventory Management

Coding systems were established; all staffs received training; all items in stores coded; and program loaded with store items. Shelves and accessories were installed and many stores were organized. Additional stores were also organized at various branches. Picture 3.1 shows Czech WTP store before and after organization and coding as an example.

Before After

Picutre 3.1: Czech WTP Store in Beni Suef Before and After Organization

c) Fleet Management

Fleets of the utilities were assessed in detail and assessment reports were prepared. These reports identified fleet spare parts not in use, which the utilities sold. Fleet was classified in three categories: usable, repairable, and obsolete. FARA funds were used to provide repairs for some of repairable equipment.

On the average, 61% of the fleet is working, 8% of fleet is un-repairable and 31% of fleet is repairable. Repair plans are under implementation.

d) Occupational Safety and Health

Under project guidance, the utilities established operational safety and health departments to comply with national OSH regulations. These departments are charged with enforcing safety and health regulations and reporting on accidents and work injures. To further help the utilities in meeting OSH regulations, the project assisted the utilities in procuring safety equipment to enable the utilities to reduce the likelihood of accidents and respond effectively when accidents occur.

3.2.2 Quality Control/Quality Assurance (QC/QA)

Ensuring that potable water delivered to the utilities' customers meets the health standards of the Ministry of Health and Population (MOHP) is a major obligation of the utilities. When the project started, sampling of water quality was sporadic. Thus, the project embarked on a comprehensive QC/QA program to first train utility chemists in proper testing procedures, establish routine reporting systems of water quality, and a feedback system that reports water quality to plant managers so that corrective actions can be taken to ensure that water quality meets health standards. Now more than 97% of the routine samples meet MOHP potable water quality standards. With project support, Minia and Beni Suef established fully equipped central laboratories, and equipment at the Fayoum central laboratory was upgraded to improve its performance. Figure 3.1 illustrates the results of the testing program.

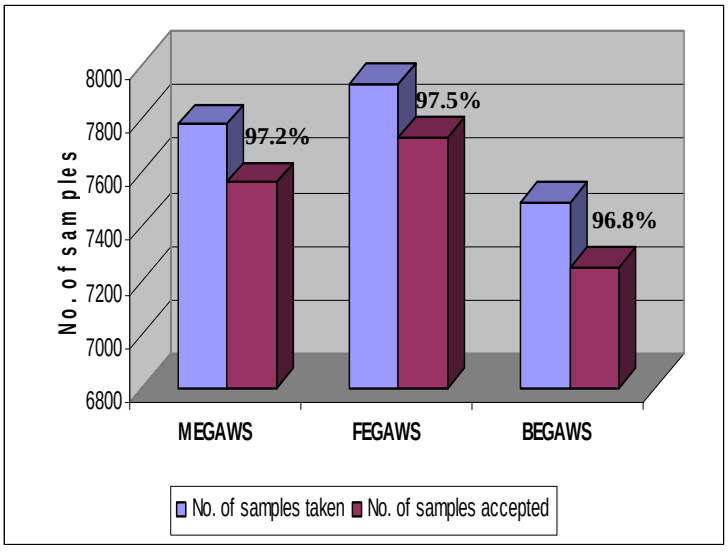


Figure 3.1: Number of Samples Taken and Accepted

3.2.3 GIS Systems, Water/Wastewater Network Mapping & Network Management

Effective management of water and wastewater networks and utilities requires up-to-date maps of facilities and networks that identify their location, and provide information about key network features, such as the age of the networks, location of valve chambers and manholes, network sizes, etc. When the project started, other donors had provided Fayoum and Beni Suef with some components of network systems. MEUIS together with these two companies strengthened and expanded the coverage of the systems provided by other donors.

In Minia, where no GIS systems existed, the project worked with the Minia Company to establish a GIS department and to map eight major urban water and wastewater networks. Doing so required training utility staffs in GIS applications, procuring digital base maps from the Egyptian Survey Authority and adding water and wastewater networks to the base maps. As a result, now the utility has up-to-date digital maps of its major urban networks and is in the process of digitizing village networks using its own resources. Picture 3.2 illustrates the GIS department in Minia.

Picture 3.2: GIS Training in Minia

Sewer-cleaning is an essential part of network management to prevent flooding. The project worked with the utilities in implementing the following three main steps in the cities of Fayoum, Beni Suef, Minia and Abu Qurqas.

- On-the-job training of utility cleaning teams.
- Cleaning program under direct supervision of the institutional contractor.
- Continuing cleaning program with the team trained on cleaning work under minimal supervision of the institutional contractor.

Figures 3.2 and 3.3 indicate the length of sewers and number of manholes cleaned for each utility respectively for the cities of Fayoum, Beni Suef, Mina and Abu Qurqas.

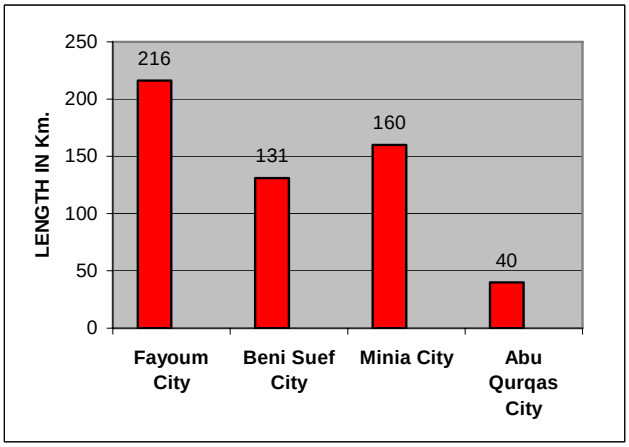


Figure 3.2: Length of Sewers Cleaned

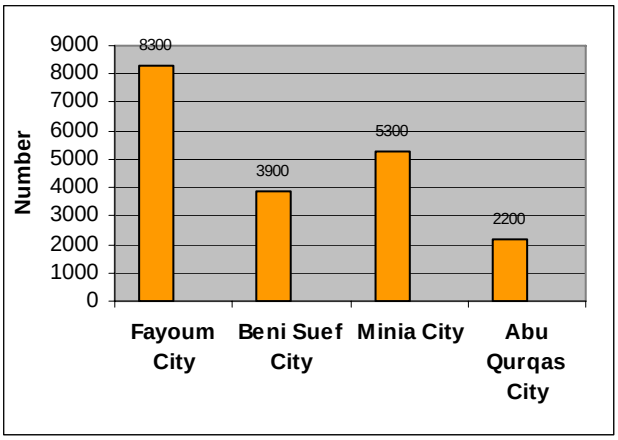


Figure 3.3: Total Number of Manholes Cleaned

3.2.4 Project Management/Capital Investment

As affiliated companies, the project departments will increasingly be called upon to perform broader roles in project management, including capital budgeting for new plants and equipment. Anticipating that enhanced requirement, MEUIS launched broad based project management training covering all aspects of the project-cycle starting with project identification and going through commissioning and handover of new projects. Training covered the following:

- Introduction to project management concepts.
- Master plans and updating master plans including a review of the Harza Master Plan prepared for each of the utilities under separate USAID funding.
- Selection and management of consultants and design firms.
- Preparation of bid documents, bidding, tender review, and evaluation and selection of contractors.
- Construction supervision.
- Commissioning and handing-over completed projects.

Building on the hydraulic modeling carried out under the Master Plan, MEUIS provided training in hydraulic modeling for water networks and in the procurement of specialized consultants to conduct hydraulic modeling.

To prepare the utilities for taking over new USAID funded water and wastewater facilities, MEUIS carried out preparatory training of the utility engineers and technicians who will take over operations of the new facilities when commissioning is completed. The training covered operations and maintenance practices, QC/QA, computer modeling, and management and administration skills. To expose the operators to plants with similar technologies, the project sponsored experience sharing trips to WWTPs in the Canal Cities, Cairo, Alexandria, and the Delta.

3.2.5 Water Loss Reduction

The sources of unaccounted for water (UFW) were largely unknown at the start of the project and UFW was high reaching over 65% of produced water. To mitigate high UFW, the project worked with the utilities to establish Water Loss Reduction Departments and to train the staffs of these departments in procedures for conducting water audits to identify the sources of UFW, and to take remedial steps to reduce UFW. These water audits first identified the sources of UFW whether they are physical leaks, unbilled water, or illegal connections. Next, the audit teams took remedial actions to rectify the situation, such as removing illegal connections, improving billing, or installing bulk meters at production facilities to measure production accurately. As Picture 3.3 illustrates some water audits resulted in fixing leaks in the transmission networks to reduce physical losses.

Before **After**

Picture 3.3: Leakage in Transmission Lines (Air Valve in Itsa) - Fayoum

MEUIS through USAID funding also provided extensive water loss reduction equipment such as portable flow meters, fixed bulk meters, and leak detection equipment. In all cases, the project provided training on the use of equipment.

As a result of setting up the water audit reporting systems in the three utilities, average UFW was reduced from approximately 65% of production to 38%. Water audits have been completed in all markez in Fayoum, and all cities in Minia and Beni Suef. Figure 3.4 shows the status of water audits in Minia, and Table 3.2 shows unaccounted for water before and after reduction.

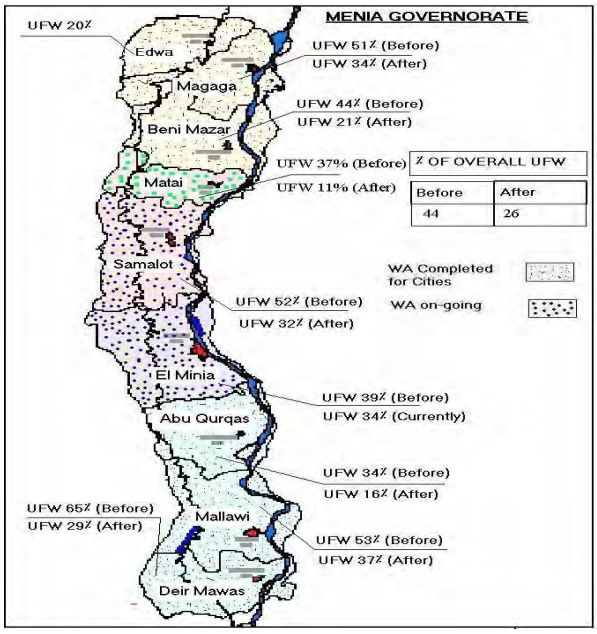


Figure 3.4: Water Audit Status - Minia

Table 3.2: Un-accounted For Water Before and After Mitigation Measures

Location	UFW Before	UFW After
Beni Suef (Cities)		
El-Wasta	37	28
Nasser	52.5	35
Ehnasia	49	39
Beni Suef City	46	37
Beba	53	26
Somosta	34	28
El-Fashin	26	15
TOTAL	**43%**	**34%**
Fayoum (Markez)		
Fayoum City	47	36
Itsa	44	28
Ibshwai	44	37
Sennoures	41	29
Tamia	57	47
TOTAL	**47%**	**37%**
Minia (Cities)		
Edwa	20	20
Maghagha	51	34
Beni Mazar	44	21
Mataii	37	11
Samalout	52	32
Minia	39	34
Abo Qurqas	34	16
Mallawi	53	37
Dier Mawas	65	29
TOTAL	**44%**	**26%**

Through the FARAs, the utilities procured and installed more than 250 bulk meters to measure production accurately. Next, using the results of water audits combined with regular reports of water sold obtained from the computerized billing systems, the utilities are now able to accurately determine the sources of UFW and take actions to reduce UFW to acceptable levels.

Table 3.3 shows the number and type of bulk meters installed by the three utilities to determine UFW accurately in all three locations

Table 3.3: Number and Type of Bulk Meters Installed by the Utilities

Utility	Turbine Meters	Ultra-Sonic Meters	Total
Beni Suef	31	26	**57**
Fayoum	110	12	**122**
Minia	67	4	**71**
Grand Total	**208**	**42**	**250**

3.2.6 Fixed Amount Reimbursement Agreements

To supplement funds provided directly under the PADCO contract to procure equipment, MEUIS assisted USAID and the three utilities to identify a comprehensive program of commodity and services procurement funded through FARA agreements signed between USAID and each of the utilities. Altogether, the FARA program supported by MEUIS entails LE 45 million of procurement or LE 15 million per utility. MEUIS experts assisted the utilities in bid document preparation, tendering, award and certification of the following commodities and services:

- Headquarters furniture, accessories, computers, networks, and air conditioners.
- Bulk and customer meters.
- O&M equipment and instruments including pumps, valves, and piping systems.
- Energy conservation equipment.
- Central laboratories and branch laboratories.
- Stores and inventory systems.
- IT support and management contracts.

3.2.7 Private Sector Participation

As noted earlier, the utilities embarked on a program of procuring specialized services from private vendors to provide services that are not efficiently handled by the utilities. Under this program, the utilities launched the first program to outsource septic tank evacuation to private vendors. Similarly, they have outsourced IT support and management contracts to specialized vendors and are considering a wide range of other outsourcing contracts.

3.2.8 Impacts of Technical Affairs

Wide ranging impacts resulted from all aspects of the technical affairs support provided by the project. Utilities are now more able to measure production to meet customer demands for water and wastewater services. Using the various procedures, reporting systems and efficiency measures put in place by the project, the utilities are able to control O&M expenditures more effectively and focus scare resources on delivering high quality services to their customers.

QC/QA programs ensure that the products that they provide to their customers meet the potable water standards of the Ministry of Health. Finally, overall strengthening of technical affairs departments of the utilities means that they are able to take over more than 30 new treatment facilities financed by USAID or GOE.

3.3 FINANCE

Prior to MEUIS project, the three utilities operated on cash basis and there was no concept of accrual of revenue and expenses. Budgets were prepared based on historical data and with provisions for inflation rather than on performance and cost. No regular financial reports were produced and management was unable to monitor the financial performance of the utilities. Accurate records and values of fixed assets did not exist and there were no cost accounting or stores accounting functions. Thus, cost control and monitoring were absent. Regular banking reconciliation, cash forecasting and cash management, as well as financial planning and projections did not exist. With the assistance of the project, the utilities' financial management systems have grown and matured. As can be seen from the following sections, MEUIS utilities are now operating similar to private companies and manage utilities finance using very advanced systems and instruments.

3.3.1 Financial Reporting

In 2004, a presidential decree converted 14 water utilities into affiliated water companies operating under Law 203/1991. Based on this decree the MOF requested the three EGAs to close FY 2003/2004 by the end of April 2004 creating a ten-month fiscal year. The new financial year started May 1, 2004 and will last 14 months until June 30, 2005.

The three companies continued to achieve high rates of cost recovery. Results of 8 months of FY 2004/2005 show that the companies achieved cost recovery rates of more than 100%. By the end of the new fiscal year when all revenues and costs are recorded, the three utilities are expected to exceed 100% O&M cost recovery.

Figures 3.5 and 3.6 show collection and O&M cost recovery for the three companies during the eight months of FY 2004/2005, respectively. By the end of FY 2004/2005, revenues are expected to reach LE 38, 26 and 41 millions in Fayoum, Beni Suef and Minia, respectively.

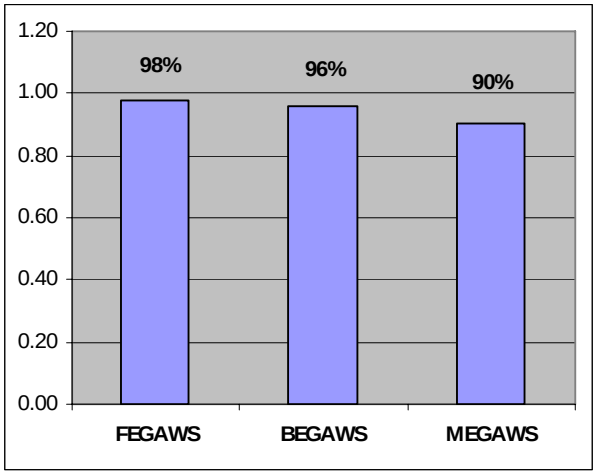


Figure 3.5: Collection Efficiency

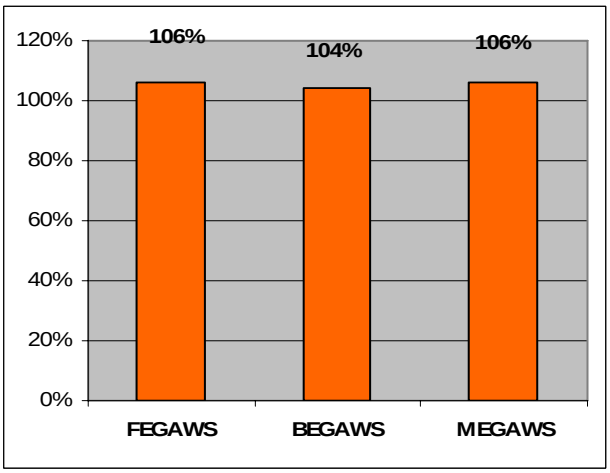


Figure 3.6: Cost Recovery Percent

The three water companies are now producing financial reports on a regular basis (quarterly, semi-annually and annually). Income statements are prepared every three months in the three companies while balance sheets are produced semi-annually and annually.

Table 3.4 shows the income statements for the three companies as issued on 31/3/2005.

Table 3.4: Income Statements Excluding Depreciation for the 3 Companies - 31/3/2005 (LE 000)

Description	FEGAWS	BEGAWS	MEGAWS
REVENUES			
Total Revenues of Current Activity	35.110	30.822	35.887
Total Current Transfer Revenue	0.999	2.039	2.197
Actual EGA Revenue	36.109	32.861	38.084
Current Deficit (or surplus)	-1.952	6.875	-3.226
Total Revenues	**34.157**	**39.736**	**34.858**
EXPENDITURES			
Salaries	17.971	15.811	20.492
Commodities Requisites	16.657	8.185	11.885
Service Requisites	1.089	0.605	0.519
Purchases for Sale	1.885	0.869	6.525
Current Transfer Expenditures (excluding depreciation)	0.199	0.266	0.541
Compensations and Fines		0.100	
Capital Losses		0.000	
Prior Years Expenditures	0.260	0.150	1.348
Total Expenditures	**38.061**	**25.986**	**41.310**

3.3.2 Cost Accounting

The project assisted the companies in establishing their cost accounting systems. These systems proved to be sustainable and were approved by CAA. The three companies are now capable of producing cost accounting statements on a quarterly basis in which expenditures are distributed over different cost centers and cost elements. More than 500 cost centers were developed in each utility including all mobile equipment. Recently, the cost centers have been modified according to the newly applied International Accounting System (IAS).

FEGAWS cost accounting statement, indicating the main cost centers and cost elements for the 11 months of FY 2004/2005, is presented in Table 3.5.

Figures 3.7 and 3.8, respectively show distribution of FEGAWS costs by main cost centers and water direct costs, as an example of the cost centers now available in the three utilities.

Table 3.5: Example of Distribution of Main Cost Elements by Activities-FEGAWS 04/05(11 months) (LE 000)

Item	Water	Wastewater	Evacuation	Procurement for Sale	Total
Salaries	2.602	3.076	0.286		5.964
Commodity Inputs	4.424	0.417	0.110		4.951
Electricity	8.646	1.368	0.000		10.014
Maintenance	0.374	0.150	0.010		0.534
Procurement for Sale	0.000			1.885	1.885
Depreciation					0.000
Total Direct Cost	16.046	5.011	0.406	1.885	23.348
Services Indirect Cost	2.112	0.452	0.027		2.591
Distribution Indirect Cost	6.157	0.627	0.006		6.790
Admin. Indirect Cost	2.975	1.836	0.521		5.332
Grand Total Cost	**27.290**	**7.926**	**0.960**	**1.885**	**38.061**

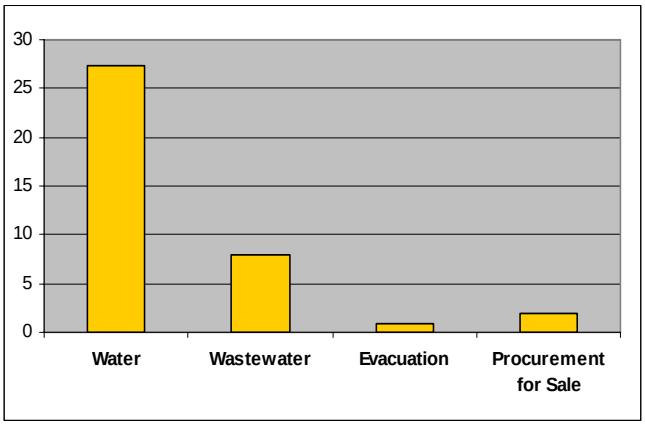


Figure 3.7: Distribution of Costs by Main Cost Centers in FEGAWS (LE 000)

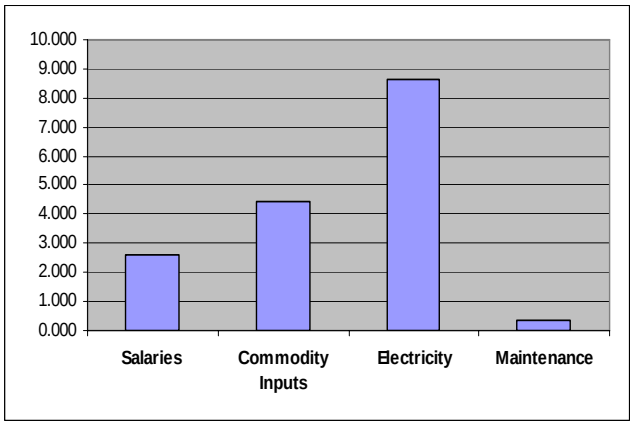


Figure 3.8: Water Direct Cost by Item in FEGAWS (LE 000)

Detailed cost accounting figures are now available for each cost center and for each geographical location. Table 3.6 gives BEGAWS cost accounting statement for surface water, filtration plants, compact units and water wells for Fiscal Year 2003/2004. Figure 3.9 shows production by plant and cost of cubic meter for each of the three BEGAWS water sources as an example.

Table 3.6: Cost Center Statement for Filtration Plants, Compact Units and Water Wells in BEGAWS

Type of Plant	Number*	Direct Production Cost (LE 000)	Annual Water Production (000 m3)	Cost of M3 (LE)
Compact Units	34	1,916	13,658	0.14
Water Wells	32	421	5,408	0.08
Filtration Plants	12	3,406	25,231	0.13
Total	**78**	**5,743**	**44,297**	**0.13**

**** The Number of plants shows operating plants only.***

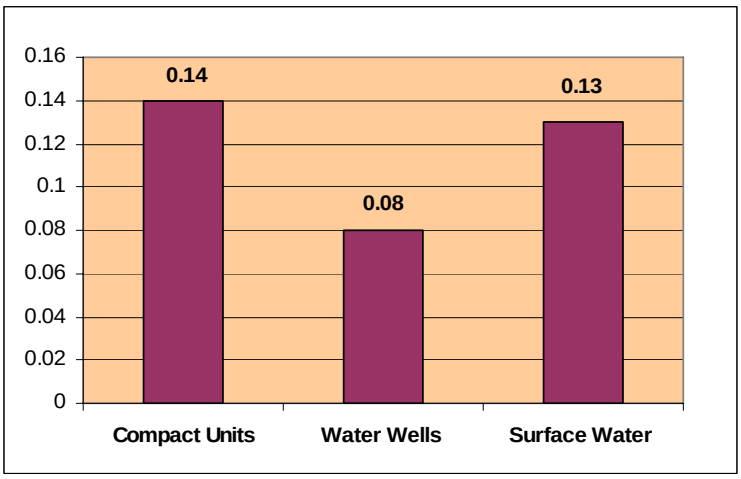


Figure 3.9: Cost of Cubic Meter by Plant Type

As shown in Tables 3.5 and 3.6 above, cost accounting reports are an important tool for management; they enable the utilities to determine costs of different activities and at the same time give the weight of each cost item. For example, the composition of production costs, wages, maintenance cost, and raw materials, etc., are easily aggregated. Comparing the structure of costs of different facilities with each other and with standard costs supports decision-making and facilitates cost rationalization.

3.3.3 Budgeting

Performance based budget systems enable the three utilities to prepare their budgets distributed by cost centers. This permits proper and accurate control of expenditures by comparing actual and budgeted line item for each cost center. Assessment of the variations aids in taking correction measures.

Table 3.7 is an example of the distribution of budget allocations by cost centers and cost elements for FY 2004/2005 for BEGAWS. Figures 3.10 and 3.11 respectively, show budget distribution by main costs for FY 2004/2005, and distribution of salaries by main cost centers for BEGAWS.

Table 3.7: Distribution of Budget Allocations by Main Cost Centers FY 04/05-BEGAWS (LE 000)

Main Cost Center	Wages	Commodity Inputs	Services	Procurement for Sale	Total
Water	6,662	6,581	208		**13,451**
Wastewater	1,961	1,998	52		**4,011**
Septic Tank Evacuation	1,038	565	64		**1,667**
Production Services	1,406	252	202		**1,860**
Distribution	5,379	496	148	800	**6,823**
Admin. Fin. Services	3,054	108	126		**3,288**
Total	**19,500**	**10,000**	**800**	**800**	**31,100**

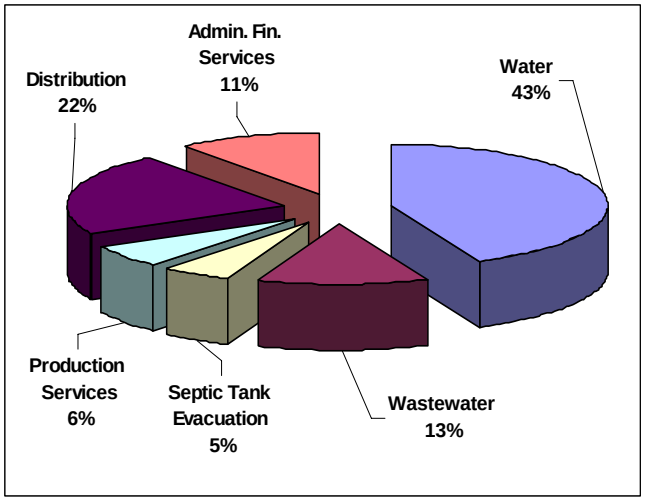


Figure 3.10: Distribution of Budget by Main Cost Centers FY 2004/2005 (BEGAWS)

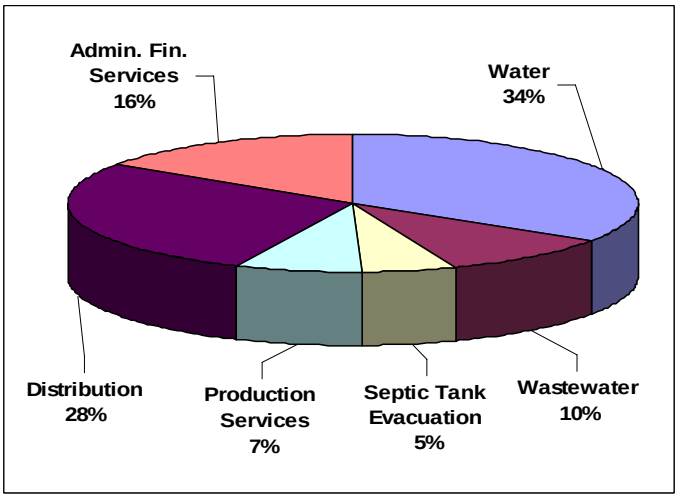


Figure 3.11: Distribution of Salaries by Cost Centers (BEGAWS)

3.3.4 Financial Planning

During 2003, MEUIS developed a comprehensive tariff model using Beni Suef data. After training the utility's staffs in use of the model and assisting them in developing a number of five-year financial scenarios projecting different cost and revenue estimates, the utility presented a tariff projection to their board of directors for approval.

With the advent of the Sector Reform Project, the MEUIS finance team assisted the utilities in implementing a broader based tariff and five-year financial planning model. This model permits developing assumptions for service demand, expansion of service capacity, expected O&M costs, expected revenues, and includes the ability to project the impacts of capital improvements.

Once the WWSRPR model was fully tested, the MEUIS finance team assisted the three Middle Egypt utilities in developing five-year financial plans covering the 2005-2010 period for different cost and revenue scenarios. Each of the utilities prepared three main scenarios to explore different revenue and cost assumptions, namely:

- O&M costs only excluding depreciation and assuming no changes in tariff structures.
- Full cost recovery and assuming no changes in tariff structure.
- Full cost recovery taking account of labor rationalization at current tariff rates.

Each of the scenarios took into consideration the following assumptions:

- All planned capital investments of USAID and the GOE will be operational during the five-year plan period.

- Annual population increases will follow historic rates creating demand for new connections.
- Water demand will continue to increase taking into account demand from new connections.
- Recent inflation rates will continue at the same rate over the five-year plan period.

Results of the Beni Suef company five-year financial plan projections (scenarios 1 and 2) are shown in Tables 3.8 and 3.9. Figures 3.12 and 3.13, respectively show the impact of the first two scenarios stated above. While the third scenario (not shown in this report) reduces the level of deficit shown in Figure 3.13, it is clear that labor rationalization alone is not enough to eliminate the cost recovery problem facing the utilities. Soft copies of these plan projections are available in the CDs found in the annexes to this report.

While individual financial plan assumptions can be challenged, the overall impact of the projections is to show that the relatively healthy financial state that the three utilities find themselves in now will not persist. The combined impacts of continued increases in input costs combined with expansion of production capacity, particularly wastewater treatment, will erode the O&M surpluses that they are currently enjoying. The utilities will have serious deficits in the near future if the GOE takes no action to reform tariffs.

The above results indicate that the actions the three utilities must undertake to improve future projections must include tariff restructure as will be discussed in Chapter 4 (Challenges and Recommendations).

Table 3.8: Beni Suef Company Scenario 1: O&M Cost Recovery at Current Tariff Rates[1]

	2005	2006	2007	2008	2009	2010
Beginning Balance:	726,572	1,619,150	160,489	(3,111,805)	(6,566,470)	(11,460,947)
SOURCES						
Water Sales Revenues	14,038,433	15,961,277	17,870,434	22,121,965	24,257,613	26,084,968
New Customer Fees: Water	873,039	916,691	962,526	1,010,652	1,061,185	1,114,244
Other Revenues: Water	4,466,931	4,690,278	4,924,792	5,171,031	5,429,583	5,701,062
Sales Revenue from Rate Increases, Water	-	-	-	-	-	-
Wastewater Sales Revenues	1,570,921	1,748,059	1,919,578	2,460,531	2,891,921	2,994,509
New Customer Fees: Wastewater	-	-	-	-	-	-
Other Revenues: Wastewater	13,715,225	14,023,625	14,347,445	14,687,456	15,044,468	15,419,330
Sales Revenue from Rate Increases, Wastewater	-	-	-	-	-	-
Interest Revenue	-	-	-	-	-	-
USES						
Base Operation & Maintenance	32,411,897	37,469,229	40,498,419	46,213,363	50,986,022	55,446,906
Extraordinary O&M	1,000,000	1,000,000	2,500,000	2,500,000	2,500,000	2,500,000
Current Revenue Financing	-	-	-	-	-	-
Existing Loan Payments	360,075	329,363	298,650	192,938	93,225	-
Proposed Loan Payments	-	-	-	-	-	-
Other Annual Expense	-	-	-	-	-	-
Operating Capital and Leases	-	-	-	-	-	-
Ending Cash Balance	**1,619,150**	**160,489**	**(3,111,805)**	**(6,566,470)**	**(11,460,947)**	**(18,093,740)**
Net Increase / Decrease	**892,578**	**(1,458,661)**	**(3,272,294)**	**(3,454,665)**	**(4,894,477)**	**(6,632,793)**

[1] Scenario is taken from the WWSRPR model using data from Beni Suef Company

Table 3.9: Beni Suef Company Scenario 2: Showing Impact of Full Cost Recovery[2]

	2005	2006	2007	2008	2009	2010
Beginning Balance:	726,572	(26,359,278)	(52,262,034)	(82,316,019)	(116,321,697)	(155,293,126)
SOURCES						
Water Sales Revenues	14,038,433	15,961,277	17,870,434	22,121,965	24,257,613	26,084,968
New Customer Fees: Water	873,039	916,691	962,526	1,010,652	1,061,185	1,114,244
Other Revenues: Water	4,466,931	4,690,278	4,924,792	5,171,031	5,429,583	5,701,062
Sales Revenue from Rate Increases,	-	-	-	-	-	-
Wastewater Sales Revenues	1,570,921	1,748,059	1,919,578	2,460,531	2,891,921	2,994,509
New Customer Fees:	-	-	-	-	-	-
Other Revenues: Wastewater	13,715,225	14,023,625	14,347,445	14,687,456	15,044,468	15,419,330
Sales Revenue from Rate Increases,	-	-	-	-	-	-
Interest Revenue	-	-	-	-	-	-
USES						
Base Operation & Maintenance	53,159,144	62,913,323	68,530,111	78,014,376	86,312,973	95,282,755
Extraordinary O&M	8,231,181	-	1,250,000	1,250,000	1,250,000	1,250,000
Current Revenue Financing	-	-	-	-	-	-
Existing Loan Payments	360,075	329,363	298,650	192,938	93,225	-
Proposed Loan Payments	-	-	-	-	-	-
Other Annual Expense	-	-	-	-	-	-
Operating Capital and Leases	-	-	-	-	-	-
Ending Cash Balance	**(26,359,278)**	**(52,262,034)**	**(82,316,019)**	**(116,321,697)**	**(155,293,126)**	**(200,511,767)**
Net Increase / Decrease	**(27,085,850)**	**(25,902,755)**	**(30,053,986)**	**(34,005,678)**	**(38,971,428)**	**(45,218,642)**

[2] Scenario is taken from the WWSRPR model using data from Beni Suef Company

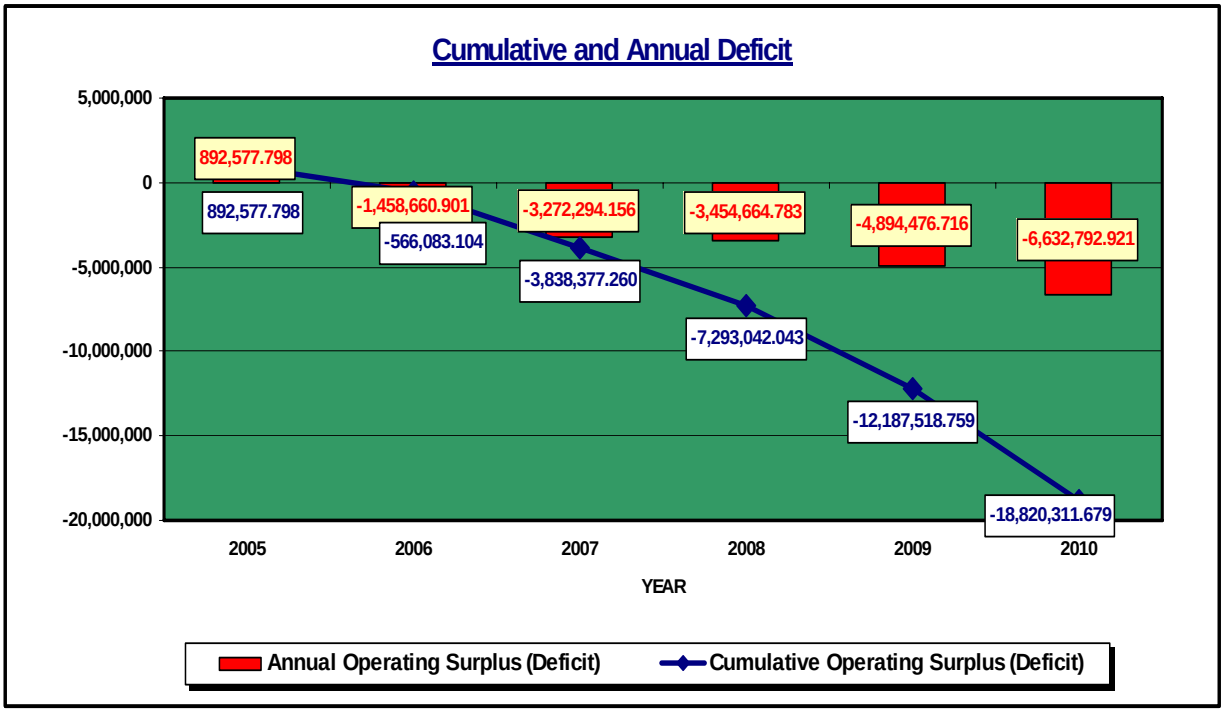


Figure 3.12: Beni Suef Company Scenario 1: O&M Cost Recovery at Current Tariff Rates[1]

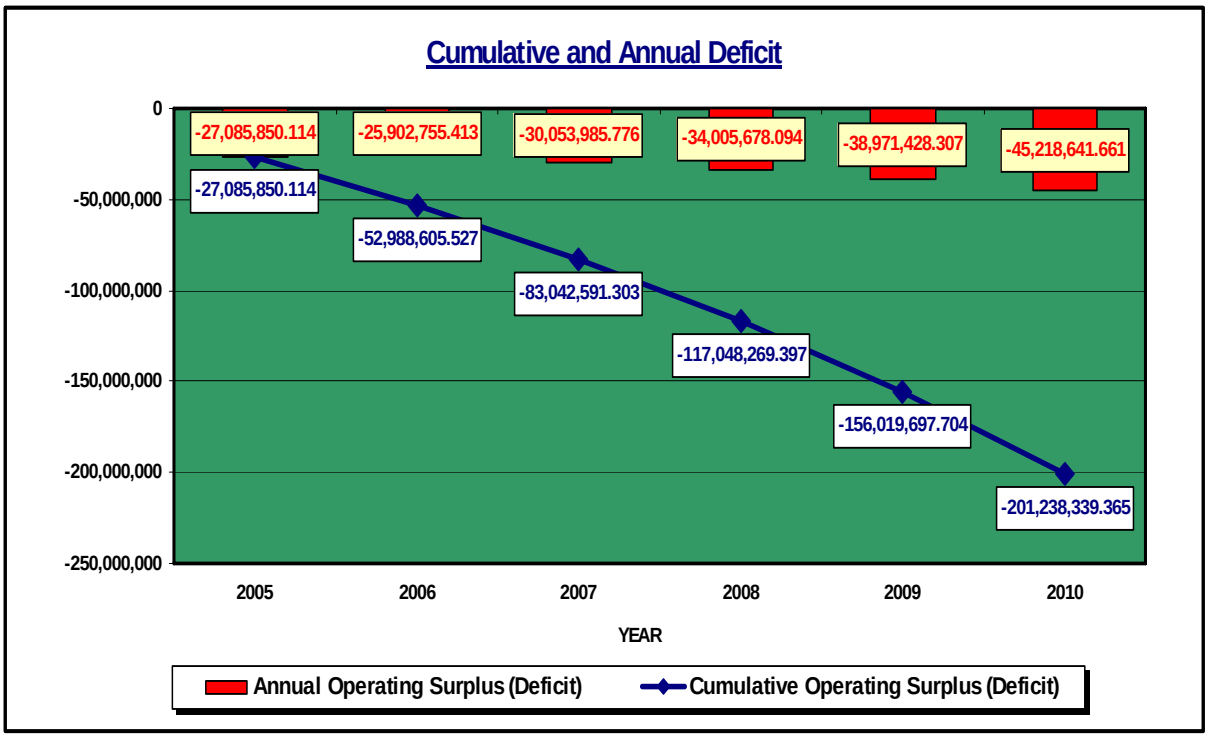


Figure 3.13: Beni Suef Company Scenario 2: Full Cost Recovery at Current Tariff Rates[2]

[1] Scenario is taken from the WWSRPR model using data from Beni Suef Company
[2] Scenario is taken from the WWSRPR model using data from Beni Suef Company

3.3.5 Financial Management Systems

In addition to the above accomplishments, the following new financial systems are operational:

a) Stores Accounting

Stores accounting departments now operate on a sustainable basis in the three companies due to MEUIS inputs. Routinely, the departments are:

- Preparing monthly accounting transactions for items issued from the stores for inclusion in income statements and in the current assets section of balance sheets.
- Evaluating stores issuance orders and ensuring that copies of orders are delivered to the cost accounting departments to be registered by cost centers.
- Verifying annual inventories against book balances and reconciling discrepancies.

These systems have been computerized through the Oracle Inventory System.

b) Assets Valuation

A system for registering fixed assets and coding has been developed in addition to allocating fixed assets to cost centers. The new value of assets has been incorporated in the balance sheet of each company and was approved by Central Agency for Accounting (CAA) on 29/4/2004.

c) Cash Management

A customized financial report has been designed and is produced regularly using the Oracle Financial System. Staffs have been trained to produce cash management reports, bank reconciliation statements and cash forecasting reports.

d) Human Resource and Payroll System

Automated human resource and payroll systems are fully operational in Minia and Beni Suef, covering all utility staffs. Monthly statements of salaries, incentives, and overtime are produced regularly. A similar system has been installed in Fayoum and live data entry of employee data is underway. The Fayoum system replaces an old obsolete system put in place by other donors.

3.3.6 Impact of Financial Management Systems

The overall impact of the MEUIS strengthening of the financial systems of the utilities is self-evident. As a result of applying all the above financial systems, total revenues soared by 110%. At the same time, cost control measures resulted in a modest increase by 35% in O&M costs. These factors resulted in an average O&M cost recovery of 100% compared to 45% at the start of the project. Meanwhile collections have grown to the point where collections from customers are

fully financing O&M costs and the need for Ministry of Finance subsidies has been greatly diminished.

These remarkable accomplishments resulted from the financial management systems that are now in place in the three utilities. While these systems will need careful management to ensure that they continue to function at peak rates, they will enable the Middle Egypt utilities to continue to enjoy financial viability if the national government makes the necessary tariff rate adjustments outlined in the full cost recovery five year financial plan projections discussed in Section 3.3.4.

3.4 ORGANIZATIONAL DEVELOPMENT AND HUMAN RESOURCES

The project and the utilities' management assigned high priority to improving the utilities' institutional autonomy. During the initial phases of the project, it was found that the organizational and human resources activities required major changes to convert MEUIS utilities into autonomous organizations.

Their organizational structures reflected typical governmental departments and not economic entities. Job descriptions were designed to suit government ranking and were not approved by Central Agency for Organization and Administration (CAOA). While the utilities were overstaffed, they lacked qualified personnel in key functional areas. Personnel evaluation systems were not effective or motivating, and were not based on fair and objective evaluation criteria. Personnel departments were badly organized. Staffs files and records were not complete, and payrolls were issued manually. Work procedures were very elaborate and bureaucratic. Management decisions were highly centralized, as authority was not delegated to cover levels of management. Labor skills required continuous training and development to cater to the needs of economic authorities. MEUIS utilities did not have training departments, training policies and procedures, qualified trainers, training materials, training equipment and databases.

The following sections summarize the accomplishments of the project and the utilities in achieving "Institutional Autonomy" and in converting into independent affiliated water companies.

3.4.1 Organization

The organization task aimed at improving the overall efficiency of the utilities by developing a structure that caters to actual requirements, and facilitates channels of communication, decentralization and decision-making processes.

To realize the above objectives, the following results have been achieved in the organizational structure, HR department development, work procedures simplification, decentralization and delegation of authority.

a) Organizational Structure

The utilities and project teams jointly developed efficient organizational structures. These new organizational structures are more suitable for commercially-oriented economic utilities, and more responsive to sustainability requirements of development.

Moreover, the organizational structures were updated to cover the following new elements:

- Functional descriptions and responsibilities of departments.

- Clear geographic divisions and lists of responsibilities of divisions from which the smallest unit is formed (plants, networks etc.).
- Relationship identified between the main functional and geographic departments and the utility headquarters.
- Updated job descriptions covering all jobs.

All the above-mentioned items serve as inputs to the organizational structure of the newly established companies and remain applicable after adding the modifications needed for an affiliated company

Figure 3.14 shows the proposed organizational structure for an affiliated company that was prepared jointly by the project and the holding company.

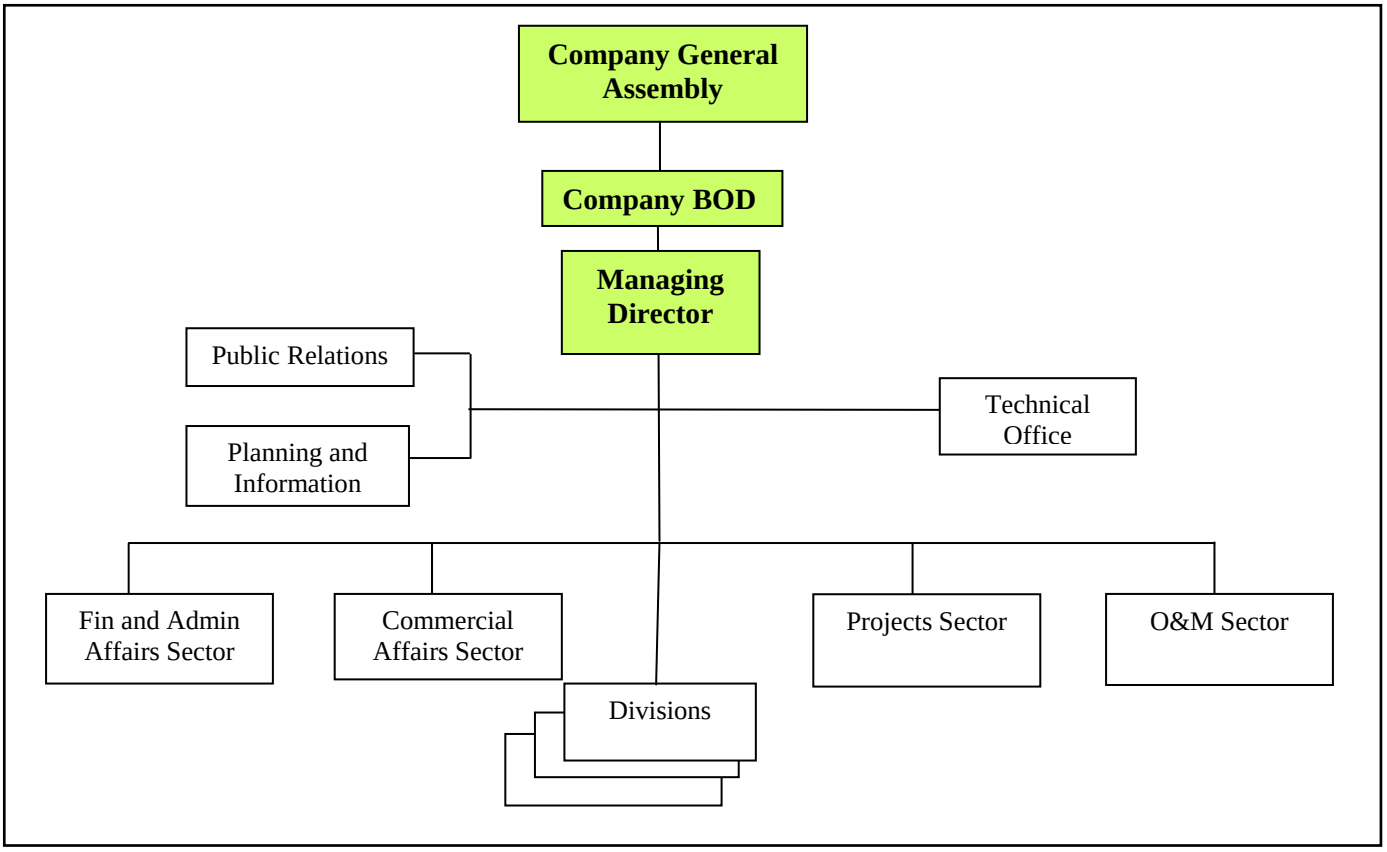


Figure 3.14: Draft Organizational Structure for an Affiliated Company

b) Human Resources Department Development

The old administration departments have been converted into modern HRD departments. All elements required for the human resource development (HRD) department are ready to be activated as soon as the organizational structures for the affiliated companies are approved. The HRD departments include the following elements:

- Internal organizational structure of the department
- List of responsibilities and divisions of the department
- A matrix of responsibilities distribution between the main departments of the utility headquarters and counterpart units in the field divisions has been prepared to achieve a balance between centralization and decentralization.
- Completed, updated and organized personnel files
- Computerized personnel data and information recorded and generated.
- Computerized payroll

c) Work Procedures Simplification

Elaborate work procedures were a major factor contributing to the utilities' inefficiencies. Simplified procedures were introduced for various activities (water and wastewater connections and petty cash and vacation applications). The following summarizes these accomplishments.

- Awareness increased among various management levels of the importance of adopting a work procedures simplification approach through training.
- Approaches for supervisors to continue simplification of other tasks developed.
- Models for work procedures simplification developed.

Figures 3.15 and 3.16, respectively show the difference in the number of steps and the number of days, between the current and proposed status of work procedures needed for a new water and wastewater connection.

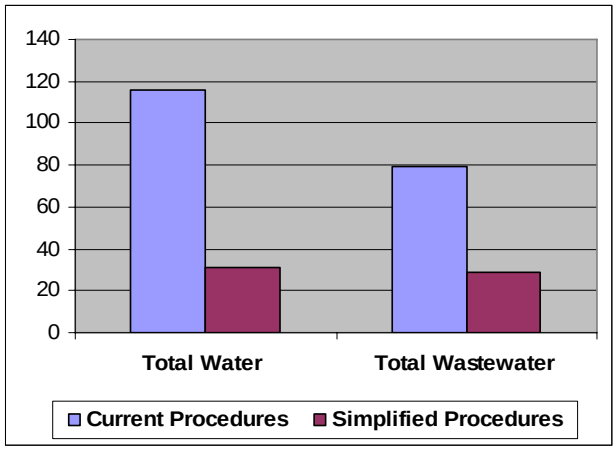


Figure 3.15: Reduction in Number of Steps

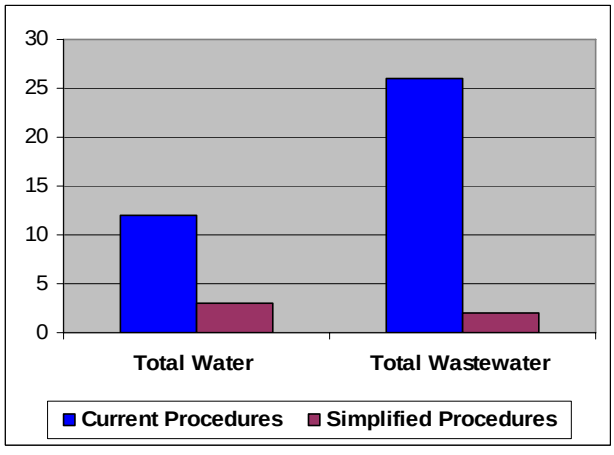


Figure 3.16: Reduction in Number of Days

d) Decentralization, Delegation and Empowerment

Centralization of decision making in the hands of the chairpersons at the early stages of the project resulted in delayed actions, and hence operational inefficiencies. In addition, centralization of decision-making and lack of appropriate and efficient systems for delegation of

authority created layers of middle and junior managers incapable of functioning and operating effectively and efficiently.

Following the establishment of the organizational structure and preparation of job descriptions, the project worked with the chairmen and senior management to streamline proper communication channels, and develop procedures for delegation of authority from senior management to middle and junior mangers. Decrees were issued by the chairmen effecting delegation of authority.

Converting MEUIS utilities into affiliated water companies offered them additional opportunities for enhancing decentralization and delegation of authority.

The decision making in the MEUIS water companies is now much less centralized and chairmen have delegated authorities to middle managers in the following areas:

- Purchase and procurement.
- Contracting.
- Financial and administration.
- Personnel.

As a result, the overall operational performance of the utilities has become more efficient and smooth.

3.4.2 Labor Rationalization

Labor costs of Egyptian utilities represent about 50-70% of O&M costs. This very high cost is due to labor imbalances and overstaffing. To address these problems, MEUIS teams worked together with the utilities to develop solid strategies for labor rationalization. These strategies first assessed the total staffing patterns of the utilities to determine staffing by functional and occupational levels. Next, the teams established skill and staffing standards needed to carry out the functions of the utilities and determined staffing surpluses and deficits based on these standards.

After that, the utilities embarked on reducing surplus staffs and at the same time attracting qualified staffs to provide skills missing in the utilities. For example, the utilities needed to hire qualified IT staffs and needed highly skilled wastewater plant operators.

Where possible, the utilities returned unnecessary staffs seconded to the utilities from local administrations back to their former local administration departments. At the same time, seconded staffs whose skills were needed by the utilities received permanent appointments.

The net result was a remarkable overall reduction of 15% in staffing in the three utilities as total staffing was reduced from 8,694 to 7,454 employees. Figure 3.17 shows the reduction in labor in each utility. This labor rationalization has had a very positive impact on improving staffing efficiencies and has allowed the utilities to contain O&M costs at acceptable levels. Figure 3.18 shows the number of employees per 1000 connections, which is a standard statistical measure of the efficiency of a water utility. If they achieve their planned target of 6 employees per 1000 connections, the three utilities will be among the most efficient utilities in Egypt. By way of comparison, Alexandria Water Company has 4.8 employees per 1000 connections, while Cairo Water Company has 14.7 emp/1000 connections.

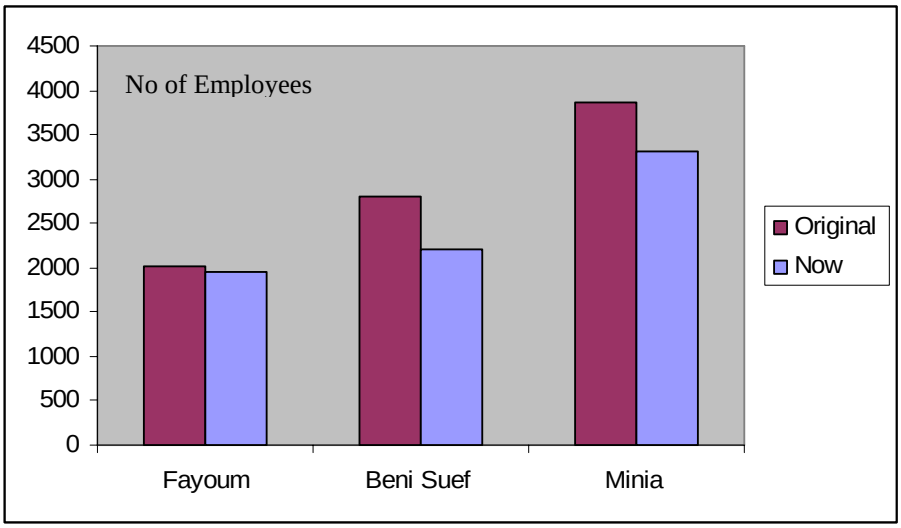


Figure 3.17: Results of Labor Rationalization Effort

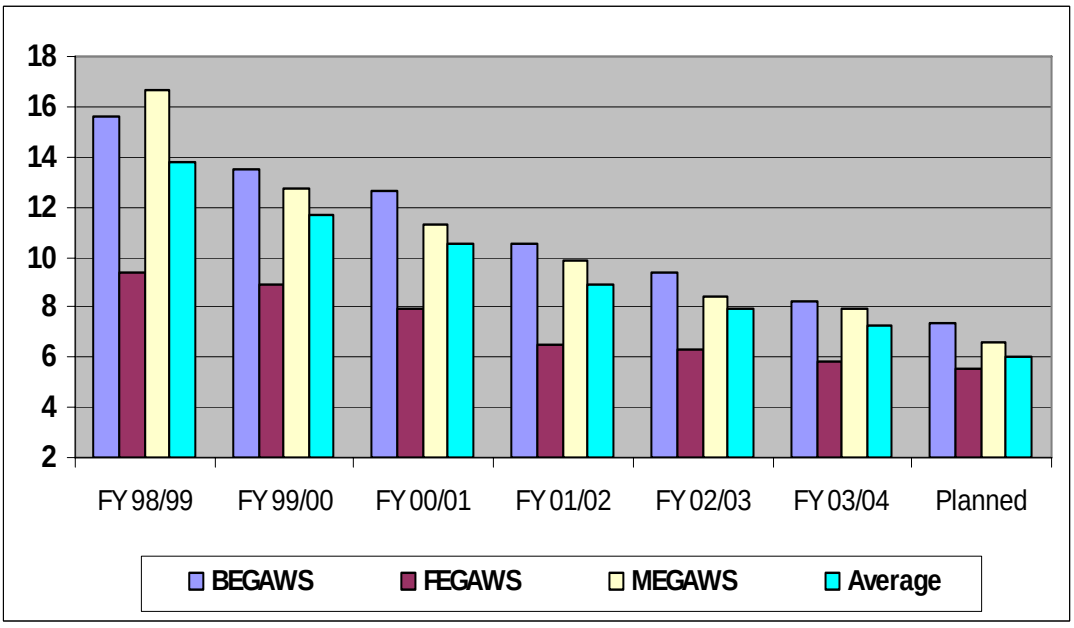


Figure 3.18: Number of Employees per 1000 Connections

3.4.3 Employee Performance Appraisal System

As independent water companies, the utilities require rational employee performance appraisal systems to motivate higher levels of performance. Working together, the MEUIS team and the utilities' HR departments developed a model employee performance appraisal system that is based on setting performance targets for categories of employees, and then ranking employee performance against those targets. This system provides the three companies with an analytical basis to determine performance fairly, and to grant incentives and salary increases based on actual performance. Such a system serves as the basis for career development programs needed to attract and retain qualified staffs. The system has been in use in the three utilities for more than two years.

As Figure 3.19 illustrates, the system identifies high performers who should receive incentives or other official recognition. These high performers may have the capacity to take on broader management skills and/or to take on additional responsibilities.

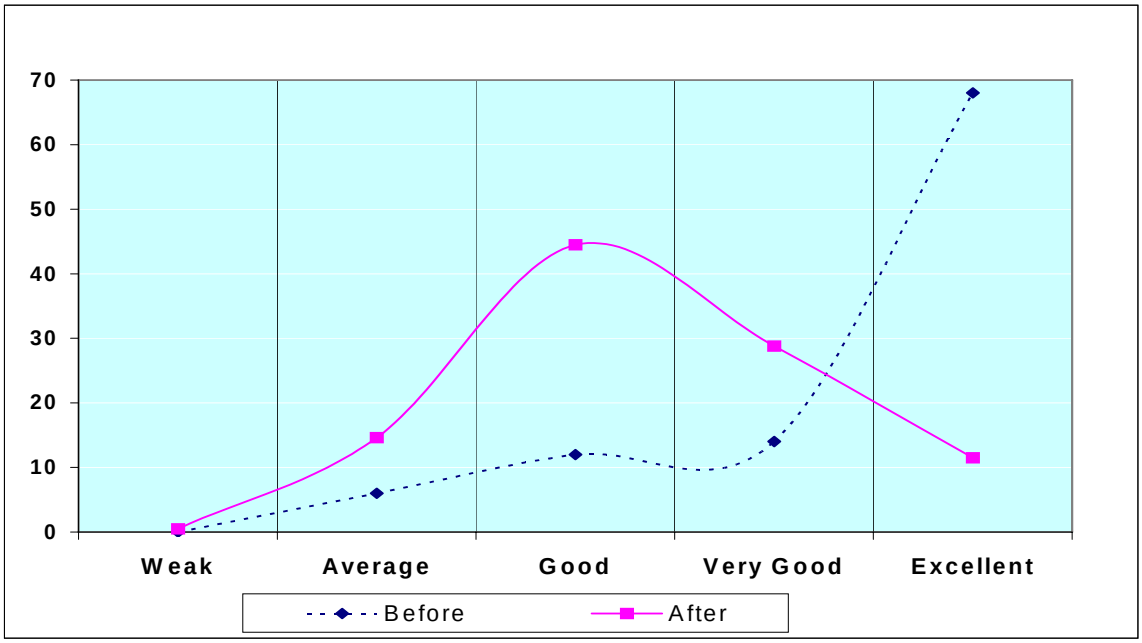


Figure 3.19: Results of the New Appraisal System in BEGAWS as an Example

3.4.4 Conversion of EGAs to Affiliated Companies

Conversion of the EGAs to affiliated companies became an important milestone in the work plan's 6th year and was successfully achieved by working closely with USAID, the holding company, the 14 affiliated companies, and the Sector Reform Project. To do so, the project provided legal, financial, technical, administrative, organizational, and planning consultants who guided the 14 EGAs through each of the steps needed for the conversion. Briefly, the project assisted the 14 affiliated companies to:

- Prepare modified organizational structures to meet the requirements of the new Presidential Decree 135/2004 and the underlying Law 203/1991 that governs establishment of new public sector holding companies and affiliated companies.
- Prepare and issue decrees by the utility chairmen delegating authority to subordinates responsible for financial, administrative, procurement, and personnel affairs of the utilities.
- Prepare and issue articles of incorporation for water and wastewater companies and have these articles published in the official gazette.
- Prepare personnel by-laws for approval by the Minister of Housing, Utilities and Urban Communities.
- Draft alternative organizational structures tailored to different types of affiliated companies.
- Design draft salary scales that recognize employee performance and simplify procedures for promoting employees based on performance. The affiliated companies have presented this salary scale to the holding company for approval.

3.4.5 Training

From the start of the project, the MEUIS training activity focused on two main objectives:

- Ensuring that the training function is sustainable by establishing competent and efficient training departments in the utilities capable of carrying out all levels of technical and professional training; and,
- Strengthening the human resource capacity of the utilities by providing comprehensive training in all functional areas of the utilities operations.

Doing so, the project assisted the utilities in establishing training departments and conducted hundreds of training sessions. A significant change has occurred in the attitudes of the utilities' staffs as a result of this training. Now, the utilities have highly skilled staffs capable of performing the responsibilities assigned to them and operating the utilities like competitive companies.

a) Establishment of Training Departments

Now the utilities have fully functioning training departments staffed with training managers, training administrators, and database administrators. They are also supported by training specialists appointed as needed. With the completion of the new company headquarters, these training departments are housed in new facilities furnished with specialized computer labs, libraries, and training equipment. Figure 3.20 illustrates a typical structure of a training department.

Training departments in Beni Suef and Minia are respectively shown in Pictures 3.4 and 3.5.

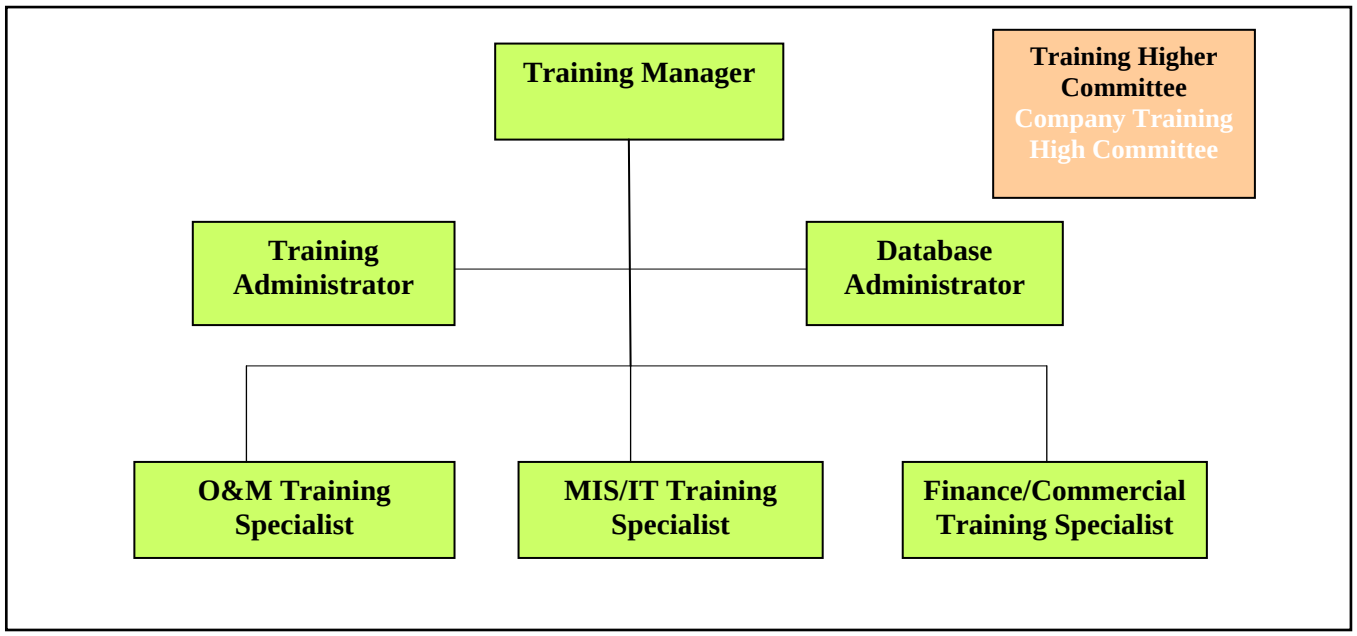


Figure 3.20: Typical Training Department Structure

Picture 3.4: Training Department in Beni Suef

Picture 3.5: Training Department in Minia.

The following tasks have been completed in each training department in the three utilities:

- Computer training labs established and equipped with computers and labs used for training. Pictures 3.6 and 3.7 show computer training sessions in Fayoum and Minia, respectively.
- Training database developed and regular reports produced.
- Training library database developed and installed, and coding and classification completed.

- Annual training plan and budget prepared.

Picutre 3.6: Computer Training in Fayoum

Picutre 3.7: Computer Training in Minia

b) Capacity Building

To improve the skills of utilities' employees, the project with inputs from reputable training providers and consultants delivered a wide range of training courses and programs. More than 55,000 training man/days have been delivered in the three utilities as shown in Table 3.10 and Figure 3.21.

Staff members who received this training were recorded in the utilities' training database to form part of their permanent employee records. This training resulted in a significant improvement in staffs performance, especially in new skill areas such as planning and computer applications.

More than 7,500 employees received computer training and are now working on new systems such as MIS, GIS, EDAMS, Oracle, and Access, etc. Technical, financial and management skills have been also enhanced.

Table 3.10: Training Activities Delivered to the 3 Utilities (Man/Days)

Training Program	Minia	Beni Suef	Fayoum	Total
Technical Affairs	6,042	6,127	5,047	**17,216**
Management & Planning	1,158	2,029	1,264	**4,451**
Information Management	2,315	2,462	2,792	**7,569**
Organizational Development	1,474	1,303	1,180	**3,957**
Finance	3,817	3,242	2,902	**9,961**
Customer Affairs & Public Awareness	2,465	2,527	2,287	**7,279**
Crosscutting	1,382	993	2,942	**5,317**
Total	**18,653**	**18,683**	**18,414**	**55,750**

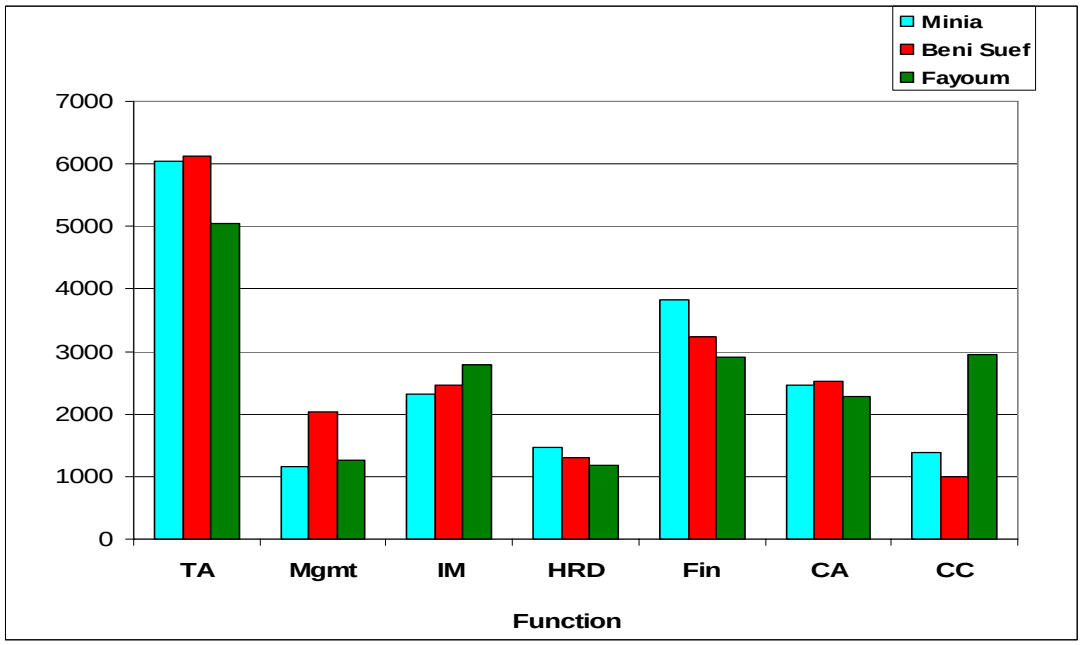


Figure 3.21: Training Delivered for the Three Utilities (Man/Days)

Legend:

TA:	Technical Affairs
Mgmt:	Management, Organizational Development & Training
IM:	Information Management and Technology
HRD:	Human Resources Development
FIN:	Finance & Inventory
CA:	Customer Affairs & Public Awareness
CC:	Cross Cutting

3.5 CUSTOMER AFFAIRS

Autonomous water companies are customer-oriented and need to have customer service offices to respond to customers' requests and queries to improve collections and increase revenues. At the start of the project, the MEUIS utilities were not customer-orientated. They lacked customer affairs functions and all related commercial activities, such as effective meter reading, collections, and new connections policies. Thus, revenues and collections were very low and they lacked concepts of customer support.

MEUIS successfully introduced a customer service orientation into the three utilities by improving all commercial functions of the utilities including customer services, metering, and collections. At the same time, the project focused on building public awareness of the existence of the customer service centers and their unique role in supplying necessary services to their customers.

3.5.1 Customer Service Centers

Customer service centers are the main point of contact between the utilities and their customers. At customer service centers, customers can obtain new accounts, inquire about their bills, complain about service problems, obtain credit to pay off high bills, and pay their bills.

MEUIS together with the utilities introduced 19 fully automated, modern customer service centers using funds provided by USAID and counterpart funds from the Egyptian contribution to the Results Package. MEUIS customized the approach to providing customer service to meet the unique conditions and requirements of each of the three utilities as follows:

- The Beni Suef company established eight customer service centers, one for each markez, linked with the company's headquarters in Beni Suef City.
- The Fayoum Company established five decentralized customer service centers in each of the governorate's marakez linked to the central database in Fayoum City.
- The Minia Company adopted a regional approach having four main regional customer service centers linked to the company's headquarters in Minia City. Additional collection centers support the regional centers by providing access to distant customers.

Pictures 3.8 and 3.9 illustrate the exteriors and interiors of a customer service center in Beni Suef.

Picture 3.8: Photo of Beni Suef CSC- Exterior

Picture 3.9: Photo of Beni Suef CSC - Interior

As the concept of customer service did not exist before the project, MEUIS collaboratively worked with the utilities to institutionalize customer service functions by:

- Developing complete organizational charts and staffing for the offices to ensure that all critical customer service functions exist and that the utilities' staffs are fully trained to perform those functions. A total of 216 customer service officers in each utility were trained to perform:
  - Data entry quality assurance.
  - Enhanced collections of current bills and follow-up of collections of arrears.
  - Quality control of meter reading and collections.
  - Efficient bill handling and document cycles to ensure that all aspects of billing flow smoothly and on time.
- Instituting a comprehensive incentive scheme for the customer service department that encourages performance (i.e., issuing correct bills on time, focusing on collections) to ensure the financial health of the utilities.
- Establishing a large customer section to focus on the one to two thousand customers in each of the utilities that provide more than 20% of the utilities' revenues. Ensuring that these customers are billed on time and that collections go smoothly was critical to the financial health of the utilities.
- Automating meter reading and collections to eliminate data entry errors by introducing handheld units, essentially small computers, with which meter readers and collectors enter meter readings or collections. These handheld units have internal processors that check the accuracy of meter readings or collections and allow bulk downloading of this data to the utilities' computerized billing system, thus speeding data entry and eliminating data entry errors. Table 3.11 illustrates the number of handheld units in use in the utilities and the total number of accounts covered by the units.

Table 3.11: Number of Workstations, Handheld Units and Accounts in the 3 Utilities

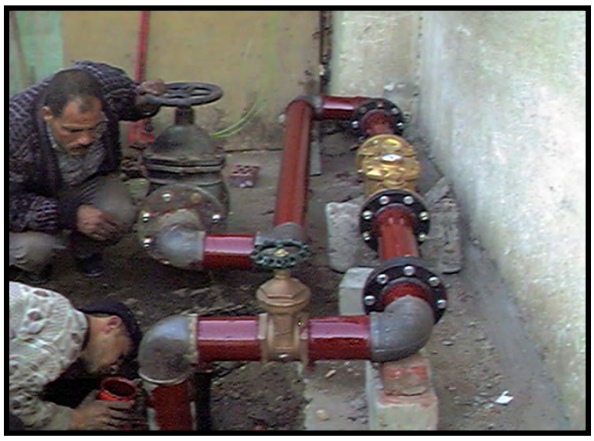
Utility	Workstation	Hand-Held Unit	No. Of Accounts
Minia	10	350	435,000
Beni Suef	8	197	270,000
Fayoum	6	200	315,000
Total	**24**	**647**	**1,020,000**

3.5.2 Metering

Accurate recording of customer consumption is essential to improving customer satisfaction and hence improving payment. If a customer feels that consumption has been fairly measured and fairly billed, he is more likely to feel obligated to pay his bills. Recognizing the importance of metering, the project worked with the utilities to improve all aspects of metering especially:

- Establishing comprehensive metering programs and training staffs to:
  - Standardize meter installations to ensure that meters are properly installed
  - Calibrate meters and ensure that metering staffs understand calibration standards prior to installation or during repairs
  - Size meters correctly according to customer demand so that the meters properly record consumption
  - Specify meters from local and international markets to ensure that the utilities' procure appropriate meters for their needs.
- Instituting proper metering standards by establishing and fully staffing metering departments and meter repair shops with complete job descriptions covering all metering functions.
- Instituting meter replacement programs to meter un-metered customers and repair broken meters by:
  - Installing 6,590 high volume meters funded by USAID in the premises of high volume commercial and governmental customers.
  - Initiating a residential metering program covering more than 88,000 meters funded by the Government of Egypt contribution to the Results Package or the utilities' own funds.
- Developing meter repair workshops capable of calibrating meters and repairing and testing defective meters. With project support, Minia and Beni Suef established three workshops each, and a new central repair shop was established in Fayoum.

Pictures 3.10 and 3.11, respectively illustrate utility staffs replacing a large meter, and a typical meter repair workshop.



Picture 3.10: Large Meter Replacement Activity

Picture 3.11: Meter Repair Workshop

Figures 3.22 and 3.23, respectively show the results of implementing the large and residential meters replacement program in the three utilities. Figure 3.24 shows the number of meters repaired on site and in workshop.

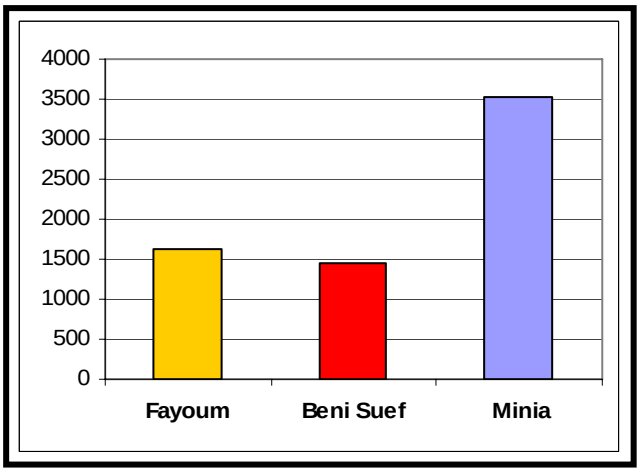


Figure 3.22: Large Meter Replacement

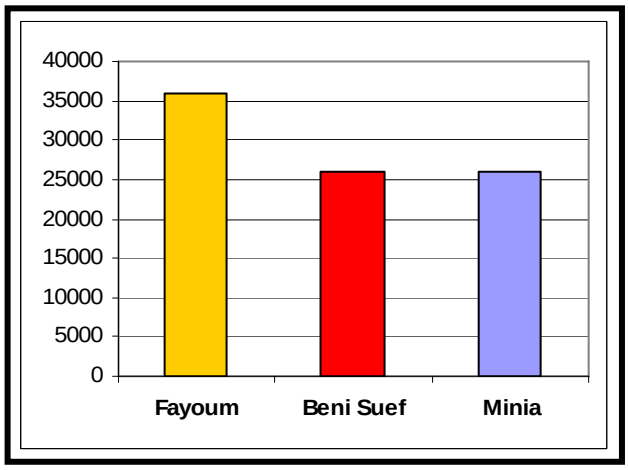


Figure 3.23: Residential Meter Replacement

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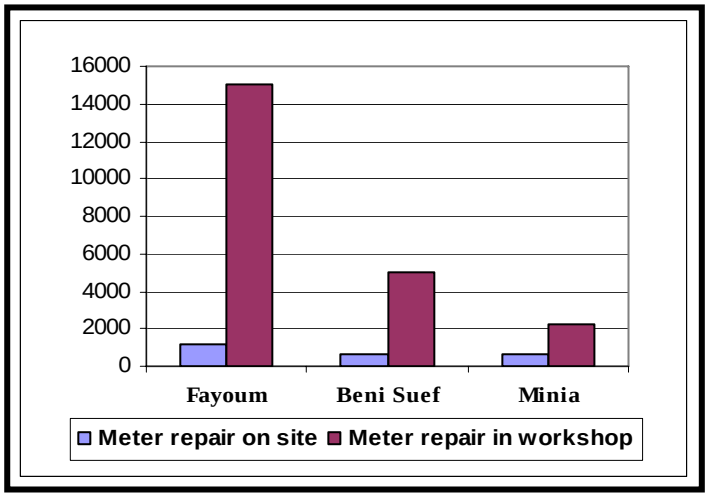


Figure 3.24: Number of Meters Repaired on Site and Workshop

3.5.3 Impacts of Customer Affairs

Dramatic impacts resulted from automating customer service and revenue functions in the utilities as shown in Figures 3.25 through 3.27. Commercial departments now are presently issuing nearly 1.3 million more bills per year using the automated systems than these issued before automation. Equally important, the error rate of issuing those bills is less than two percent. Before automation, billing quality control did not exist and no one knew whether bills were correct or not.

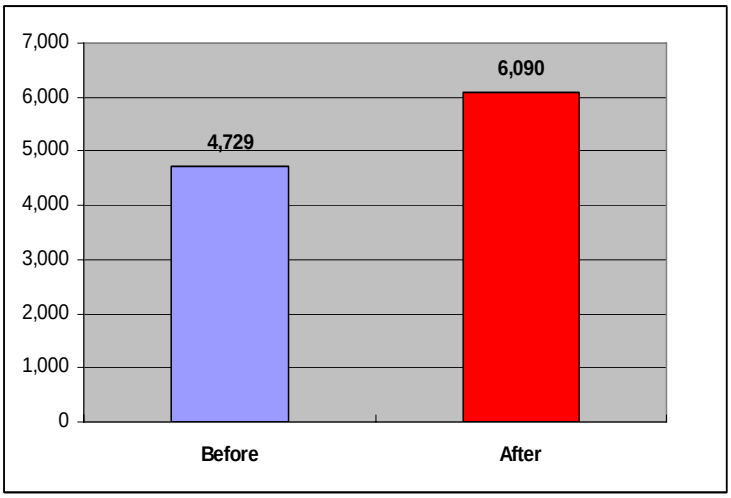


Figure 3.25: Number of Issued Bills (x1000 Bills)

Total revenues have soared since automation. On an annual basis, total revenues for FY 2003/2004 were LE 91 million compared to LE 57 million in FY 2000/2001 when automation of the billing systems started. This represents a 61% increase in revenues and resulted in the full cost recovery figures shown earlier in this report.

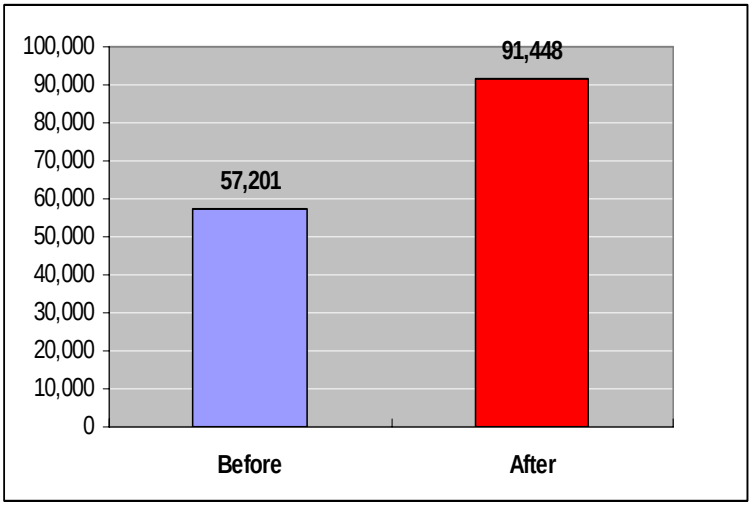


Figure 3.26: Total Revenues Before and After (LE 000)

Issuance of computerized bills clearly showing consumption and what is being billed had an equally dramatic impact on collections. Before automation, total collections ranged about LE 50 million and arrears were large. In FY 2003/2004 collections were LE 88 million and arrears were reduced to about LE 40 million. Collections are now financing O&M costs.

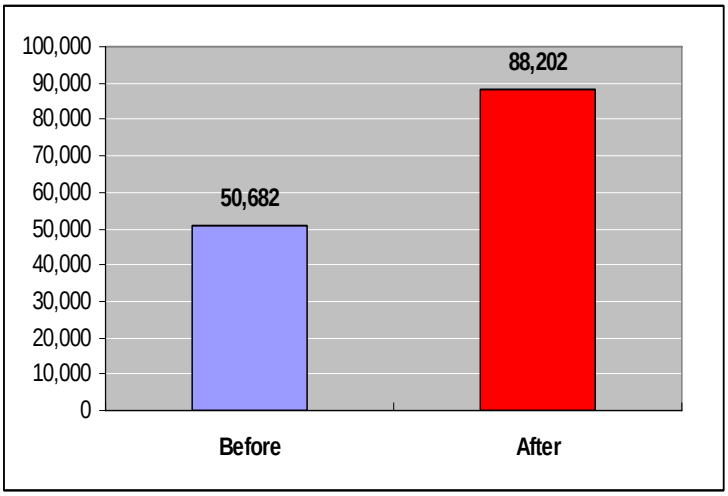


Figure 3.27: Total Collections (LE 000)

3.5.4 Public Awareness and Customer Education

A major element in strengthening the customer affairs function is public awareness and customer education. Over the lifetime of the MEUIS project, the Public Awareness and Customer Education Component has had three main objectives:

- Raise the awareness of the utilities' staffs with regards to the importance of public awareness activities as a tool by which the three water and wastewater utilities of Fayoum, Minia and Ben Suef can disseminate utility messages and realize their overall goals of cost recovery.
- Improve the public image of each utility and engender the required trust between it and the general public to create a cooperative environment that would allow for a more receptive audience to utility messages.
- Disseminate the messages of the utilities and the project to the general public to achieve cost recovery. These messages included paying water bills promptly, reporting water leakages, installing legal water connections, and conserving water consumption.

The public awareness program focused on the following three major target groups:

- Utility staffs and top management who had a poor understanding of the economic nature of the utility.
- Utility customers and potential customers.
- Public opinion makers and community leaders who make decisions about utility charges and can encourage good customer behavior among their constituents.

The first task for the PA Component was to establish a Public Awareness Unit within each utility to institutionalize awareness activities, disseminate utility messages, and design an awareness campaign document that identifies utility messages and target audiences, and recommends media tools and activities to successfully disseminate these messages.

Over the lifetime of the project, the PA Component had a two pronged approach:

- Disseminate the utilities' messages by implementing awareness activities that would assist in improving the relationship between the utilities and their customers, and realizing cost recovery objectives.
- Build the capacity of the PA units within the utilities and provide them with the necessary skills and know-how to design, plan and implement public awareness campaigns and disseminate utility messages to the general public on their own in the future.

Accordingly, with project assistance, the PA unit within each utility was able to implement the following activities successfully:

- Develop annual PA work plans.

- Conduct PA seminars and field visits.
- Develop PA messages.
- Produce printed materials (brochures, flyers, calendars, stickers, Ramadan time schedules, invitation cards, and the text for pamphlets).
- Ensure media coverage and produce press releases.
- Produce and air radio and TV interviews and programs.
- Carry out special events.
- Produce documentary films.

By implementing these activities, the PA units in Beni Suef, Fayoum and Minia, have accomplished the following:

- Improved relationships between the customers and the utility.
- Clarified the costs involved with producing potable water.
- Explained the benefits of regular water bill payment.
- Warned that culprits associated with illegal connection will be punished.
- Impressed upon the general public that it is their civic duty to report water leakages to the utilities.
- Informed customers about water conservation strategies essential to reducing their water bills.

Successful dissemination of the utility messages contributed both directly and indirectly to the recovery of utilities costs, the decrease in water losses, the increase in meter installations, and the increase in the applications for legal water connections. Getting religious authorities to agree to have their facilities metered and to pay arrears was a major impact of the PA campaigns. At present, there are effective PA units in each of the utilities capable of conducting successful awareness events and campaigns. This was not the case before the implementation of the MEUIS project.

Table 3.12 shows a summary of all events delivered during the project course. Pictures 3.12 through 3.15 show some of these events.

In brief, the Public Awareness Component's accomplishments include the following:

- Raised the awareness of utility staffs concerning the importance of public awareness as a method through which overall goals can be achieved.
- Improved the relationship between the utility and its customers and created a cooperative environment that is based on mutual trust to ensure utility message receptivity.

- Assisted in strengthening the utility's cost recovery capability by disseminating utility messages.

Table 3.12: Summary of All PA Events Delivered Over the Project Course

Activity	Fayoum	Beni suef	Minia
Seminars	8	9	10
Special Events	3	3	3
Field Visits	23	15	19
Workshops	5	14	8
Promotion Materials	21	22	27
Press Coverage	43	56	70
Documentary Films	1	1	1
Total	**104**	**120**	**138**

Picture 3.12: Education and Religious Leaders in Fayoum

Picture 3.13: Water Conservation Campaign in Beni Suef

Picture 3.14: Field Visit to American WTP in Beni Suef

Picture 3.15: Sample of Promotion and Printed Materials

3.6 PLANNING, MONITORING AND EVALUATION

Planning, monitoring and evaluation (PM&E) are key systems that link the company's activities, identify objectives and policies and create the ability for performance evaluation at corporate and individual levels. These systems provide the key links between the company and the general public and now between the affiliated companies and the holding company.

3.6.1 Corporate Plans

Before MEUIS project, the utilities did not have monitoring plans or systems except Fayoum utility which had the "Economic Plan" developed by the Dutch Project.

Staring in 2002, MEUIS initiated a participatory approach to assist the three utilities in developing their "Corporate Plans" through a series of seminars and workshops. The plans were discussed and agreements were reached to implement certain phases of the plan. Within eight months, the corporate plans were completed for the three utilities and implementation started.

The following results have been achieved in the areas of monitoring and evaluation:

- Mission statements were developed and published to inform the public of the broad goals of the utilities.
- Strategic objectives and objectives were defined to implement the mission statements.
- Intermediate results further defined milestones to be achieved while implementing the results.
- Program plans to improve performance on all fronts (technical, financial, organization, customer service, training and IT) were defined and are being implemented by utility managers with support from the project.

As an example, Box 3.1 lists the 40 program plans developed by the project and being implemented by the utility's staffs in Fayoum on a regular basis.

Box 3.1: List of Program Plans Implemented in Fayoum as an Example

PROGRAM PLANS	PROGRAM PLANS
Technical Affairs (Water) Production Measurement Water Distribution Network Management Water Distribution Network Mapping & GIS Water Audit and Leak Detection for Fayoum City Water Audit and Leak Detection for Fayoum Governorate Leak Detection for Transmission Pipelines	**Finance** Unified Accounting System Planned Budgeting Development Cash Management Cost Accounting System Tariff Study
(Wastewater) Wastewater Facilities SOPs Wastewater Facilities O&M Record Keeping Wastewater Collection System Mapping & GIS Wastewater Collection System Management	**Organizational Development** Strategic Plan Organizational Structure Personnel Appraisal System Labor Rationalization Personnel Department Development Improvement of Work Procedures and Systems Empowerment and Delegation of Authority Performance-Based Incentive Scheme Strengthening Authority Training Capabilities
(General) Maintenance Management System Quality Assurance/Quality Control Environmental Department Energy Conservation Program Store and Inventory Management System Fleet Management Occupational Safety and Health Project Management/Capital Investment Planning	**Customer Affairs & Public Awareness** Customer Service Centers Billing and Collection Activities Meter Activities Public Awareness & Public Relations
	Information Technology (IT) Systems Automation Management information reporting

3.6.2 Monitoring and Evaluation

Before the development of utilities strategic plans, the project used a monitoring plan format devised by the project based on information available at the start of the project. After the development of strategic plans, these plans have been used to monitor and evaluate the progress of the utilities in achieving the plan's strategic objectives. Quarterly review meetings are being held for top management to review quarterly achievements of each utility and progress made in the metric indicators used to monitor and evaluate the performance of each utility.

Together the utilities agreed upon 16 key performance indicators as shown in Box 3.2 that track the utility's performance. These indicators have also been used to monitor the project's progress and to

Box 3.2: 16 Utility's Performance Indictors

Water Production:
1. Water Coverage
2. UFW
3. Percent of Accepted Water Samples
4. Per Capita Consumption

Wastewater
1. Wastewater Coverage
2. Percent of accepted wastewater Samples

Customer Service
1. Percent of Metered Connections
2. Percent of Working Meters

Finance
1. Cost of 1m3 of produced Water
2. Cost of 1m3 of water sold
3. Cost of 1m3 of Wastewater treated
4. Total Revenue
5. Total Collection
6. Percent of Revenue to Collection
7. Cost Recovery

Organizational
1. Percent of Metered Connections

prepare annual project monitoring plans. Annex 1 illustrates the value of 16 metric indicators for the three utilities' baseline value on 29/4/2004, when the utilities were converted to water companies. The actual value on 31/3/2005, and the target value expected on 30/6/2005. The target value on 30/9/2005 was set by the management of the utilities and according to accepted standard whenever applicable.

It is also important to compare these indicators with their value before the start of the project to evaluate the impact of the project. Unfortunately, most of the indicators were not available before the start of the project due to the following reasons:

- Absence of a monitoring system needed to measure different activities of the utilities.
- Segregation of costs of water and wastewater did not exist

The only data available were cost recovery and collection efficiency as shown in Annex 1.

3.6.3 Management Information System (MIS)

Automated flows of information via management information systems (MIS) is essential for modern, efficient management of commercially viable water utilities. Comprehensive MIS provide: 1) managers with timely reports and analysis to permit informed decision-making; 2) the information needed by other departments to perform their tasks competently; and 3) external agencies with status reports on the companies. The MIS installed in the Middle Egypt utilities are key tools for them to report their activities to the national holding company. Elements of regular reporting are listed in window in Box 3.3.

Box 3.3: Elements of Regular Reporting

Technical Data:
1. Water production
2. Quality of water
3. Quantity of wastewater
4. Quality of wastewater
5. Breakdowns & interruptions

Finance and Commercial Data:
1. Quantity of sold water
2. UFW
3. Revenues
4. Collections
5. Costs

Customer Service Data:
1. Total number of meters
2. Number of working meters
3. Percent of working meters
4. Number of repaired meters
5. No of new connections

Manpower Data:
1. Number of appointed staff
2. Number of seconded staff
3. Number of temporary staff
4. Number of staff per/1000 connections

MIS team staffs in the three Middle Egypt utilities report directly to the utilities' chairmen on key financial, customer affairs, technical and personnel and human resource data. The MIS are capable of collecting data on a monthly basis and producing internal reports to the utility management. When needed, the MIS departments can also prepare specialized reports as shown in Figures 3.28 and 3.29.

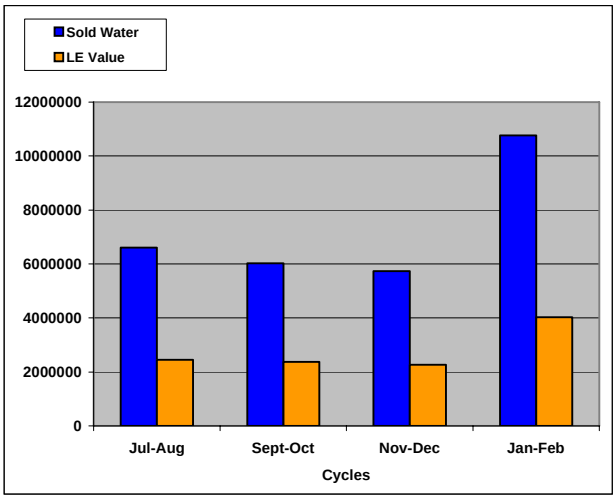


Figure 3.28: Quantity and Value of Sold Water In Minia

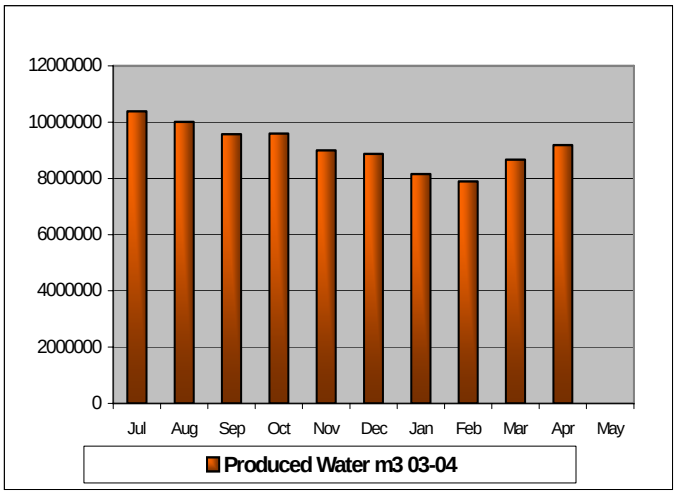


Figure 3.29: Water Produced during 03-04 in Beni Suef

3.7 INFORMATION MANAGEMENT

Before the project, information management functions were limited to basic computer applications in Fayoum (a very limited billing system and GIS established by the Dutch project), and a basic GIS in Beni Suef established by the Finnish project. This situation resulted in very low revenues and collections and impacted on the overall financial performance of the utilities. For example, water and wastewater bills were issued manually, mostly on a regular basis, using government books. Large numbers of customers were not recorded or billed and large numbers of illegal connections existed.

The lack of automated financial systems resulted in the very slow production of financial statements, which in most cases were inaccurate. Manual inventory systems added to the financial management reporting problems, as there was no regular tracking of asset flows.

In addition, the lack of automation and regular production of consolidated management reports and automated records of utilities' assets limited the ability of the utilities' management to monitor and evaluate performance of their utilities.

To address the above, PADCO assisted the utilities in establishing the following state-of-the-art automated systems:

- EDAMS Revenue System covering all commecial functions of a modern utility including new customer accounts, meter management and reading, collections, customer debt management, customer service, and financial controls.
- Oracle Financial System covering general ledgers, accounts receivable and accounts payable, cash management, and other financial functions.
- Oracle Inventory covering flows of assets.

- Giza Payroll and Human Resources automated payroll and human resource data.

The establishment of the above applications, required procurement of the following hardware and software:

- 26 servers including back-up for revenue of financial managements.
- More than 300 desktops for users of the above applications.
- Printers, communication equipment, networks (LAN and WAN) and other related accessories in the headquarters and branches.
- Oracle database.
- Windows NT and Windows XP.

Figure 3.30 shows the layout of the computerized revenue system (EDAMS) in Minia as an example.

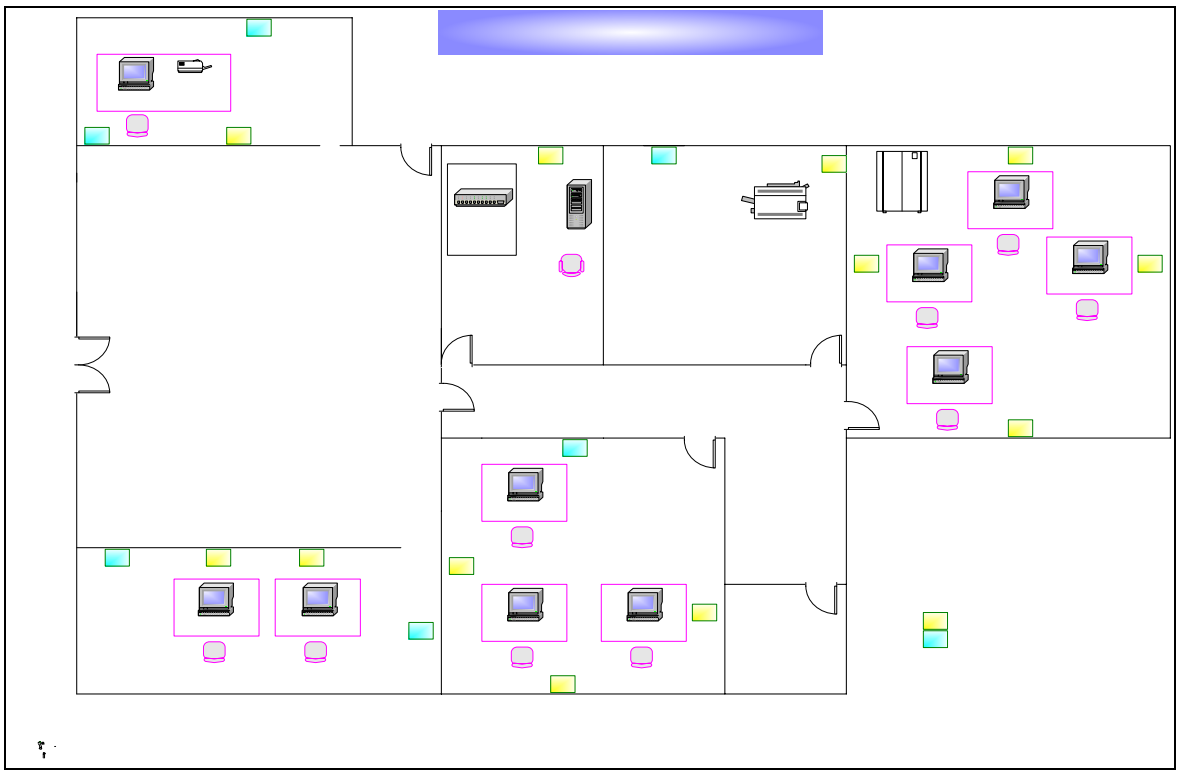


Figure 3.30: Layout of the Computerized Revenue System in Minia as an Example

In addition to the above applications, PADCO assisted the utilities in establishing management information systems (MIS), as discussed in Section 3.6 above and geographical information systems (GIS), as discussed in Section 3.2 above.

The establishment of the above noted automated systems resulted in:

- Vast improvement in collection, increase in revenue, and reduction of aged receivables and arrears.
- Improved customer relations through regular billing, installment of arrears, and accuracy of bills.
- Cost control though monitoring and evaluation of accurate financial statements, and better control and use of inventory.
- Improved monitoring and evaluation of the utilities' performance.
- Accurate record of utilities' assets and improved asset management.

To ensure the sustainability of the above systems, PADCO assisted the utilities in:

- Training more than 100 employees in the above applications to run the systems.
- Establishing IT departments and transferring highly trained IT PADCO staffs to run the applications in the IT departments.
- Developing IT support and maintenance tender documents for the above applications and outsourcing these services to qualified private sector companies.
- Installing automated networks in their new headquarters and procuring computers to automate most functions using FARA resources.

Figure 3.31 shows the organizational structure for the newly established IT department in the utilities.

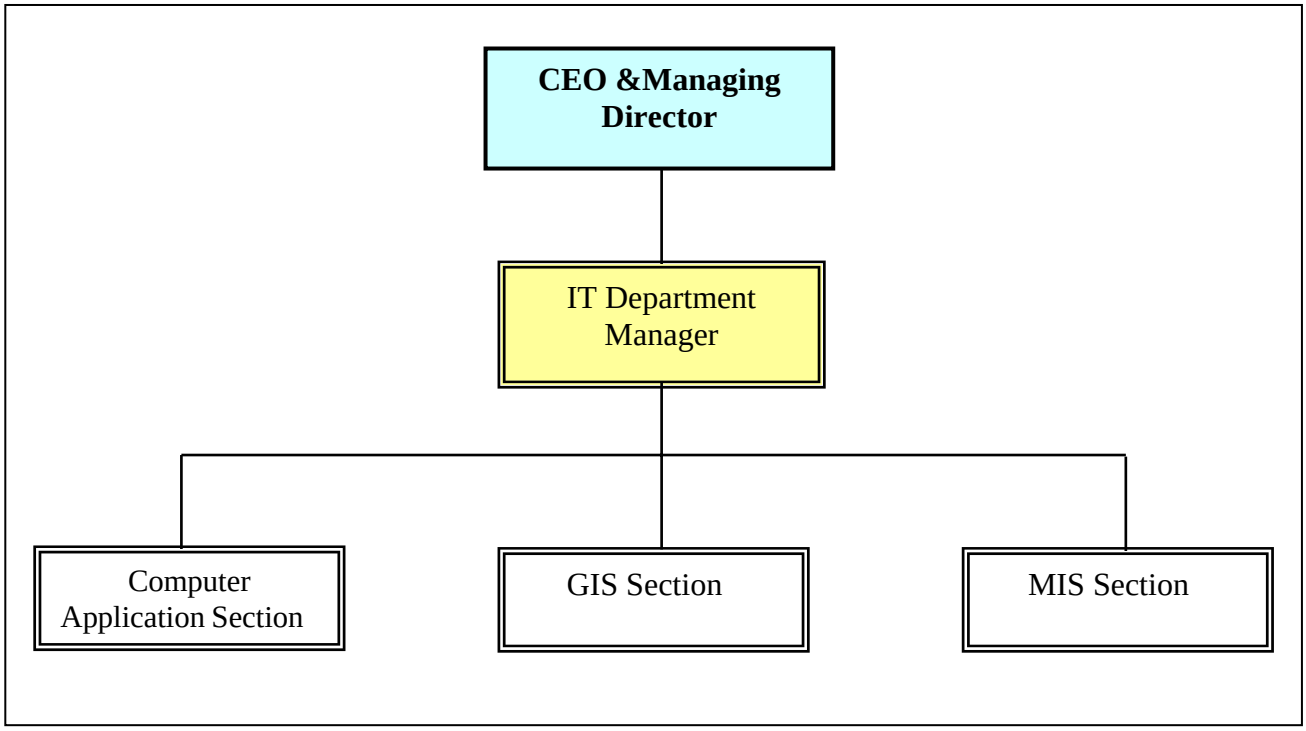
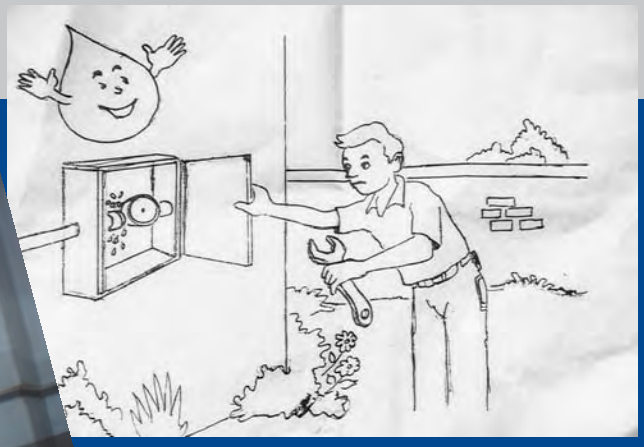


Figure 3.31: Organizational Structure of the Newly Established IT Department

The impact of the automation of information flows is evident throughout the utilities. Now regular reports are prepared on the status of the utilities and can be shared among different utility managers. The quality and accuracy of the data produced by these systems has created demands for better analysis of the problems facing the utilities, and assisted the utilities in defining appropriate solutions. Overall, the skill levels of the utilities has significantly risen as key managers are able to maintain databases on their activities, use digital geographic information to monitor the performance of their networks, and generally use reliable data to make informed decisions.

CHAPTER 4:
CHALLENGES AND RECOMMENDATIONS



CHAPTER 4: CHALLENGES AND RECOMMENDATIONS

4.1 CHALLENGES FOR THE FUTURE

The utilities have gone a long way in transforming from fragmented local administration units into affiliated water companies. Major reforms and changes continue to take place since 1995.

Presidential decree 281/1995 represented a major reform by establishing PEA whereby all assets and personnel working in the water/wastewater sector were brought together under one umbrella. PEA's were able to consolidate their assets, human resources, retain their revenues and finance their expenses from generated revenues and of course use GOE subsidies to close the gap between costs and revenues. As indicated in Chapter 3, the three MEUIS utilities, with the input from USAID/PADCO have grown over the past 6 years into mature water utilities that are providing efficient water services to more than one million customers, representing a population of about 8 million persons.

This is indicated mainly by providing service coverage of piped water system to more than 95% of population, and achieving 100% O&M cost recovery, and hence financial independence (self finance of O&M cost without subsidies from GOE). This has been achieved, as discussed in Chapter 3, by taking major steps in developing these utilities by focusing on effective planning and policies formulation (corporate plans and master plans), and establishing and implementing systems and instruments covering all functional areas (O&M, finance, revenue, public awareness, HRD and organizational development, etc.).

The more recent sector reform steps taken by GOE include issuing Presidential Decrees 135/2004 and 136/2004, which established national W/WW Holding Company, 14 affiliated companies operating under Law 203/1991, and a Regulatory Agency (EWRA). These recent reforms have given the three MEUIS utilities vast opportunities to further grow and mature.

The companies' Board of Directors (BOD) have vast authorities and the companies are no longer tied by GOE bureaucracies, such as CAOA rules and regulations, Law 89/98 procurement regulations, and interferences of state council and Ministry of Finance representatives. Moreover, the companies develop their own by-laws and regulations, and are mainly accountable to the General Assembly of the holding company, and CAA only audits their operations.

However, as autonomous water companies, MEUIS utilities and other water companies operating under Law 203/1991 face major challenges that need to be addressed in the near future. Major challenges include the following:

- **Financial Solvency**

While MEUIS utilities achieved O&M cost recovery, they will be required as autonomous companies to cover depreciation of assets. Also, increased wastewater services will exacerbate utilities finance as the current surcharge is only 35%. In addition to achieve full cost recovery, these utilities will be required to finance new infrastructure, rehabilitation works, and the procurement of equipment and instruments.

- **Wastewater Service Coverage**

The three MEUIS utilities are required to improve wastewater services vastly in terms of coverage and quality. Wastewater coverage in Fayoum, Beni Suef and Minia is approximately 25%, 15% and 10%, respectively.

Even after receiving new projects financed by USAID and those to be handed-over to them by NOPWASD shortly, service coverage will increase only marginally. GOE plans and budgets available to increase coverage through grant financing by NOPWASD will require a very long time to provide wastewater services to a larger percent of the population.

This situation will not be acceptable from health, environmental and regulatory aspects. A more innovative and dynamic approach is required to address the wastewater service challenge.

- **Qualified Personnel and Key Senior and Middle Management Positions**

Despite great efforts and major decisions taken over the past 2-3 years to rationalize the labor forces, MEUIS utilities are still somewhat overstaffed. In addition, despite continued efforts in capacity building and extensive training by MEUIS project over the past few years, MEUIS utilities suffer shortages in qualified staffs in some essential functions such as wastewater, information technology, GIS, hydraulic analysis, master planning, design and project management of new facilities, and financial and management systems.

Again, serious decisions and new approaches need to be taken by the three companies to address these significant personnel related problems.

To address the above-mentioned challenges, sustain success and results achieved to date, and secure autonomy and commercial viability of the three MEUIS water companies, PADCO - based on its long experience and the lessons learned from this project - presents the following recommendations, which are categorized as general and specific recommendations.

4.2 GENERAL RECOMMENDATIONS

General recommendations are mainly external to MEUIS utilities and address challenges discussed in Section 4.1 above. These challenges will certainly require the combined efforts of the water companies, the holding company and GOE.

General recommendations mainly address essential solutions to challenges such as:

- Tariff restructure.
- Private sector participation (PSP).
- Personnel systems.

General recommendations include the following:

- A long-term financing plan needs to be developed for new infrastructure that would attract public and private sector finance. Key elements that need refinement are:
  - Cost recovery mechanisms for depreciation need to be identified. The recent deficit forgiveness of the MOF for accrued deficits relieves the utilities of past debt, but does not solve the problem of future investment.
    - Depreciation for water could be included in restructured tariffs as follows:
      - Maintain lowest tariff block for 10 m3/month/customer at LE 0.23.
      - Increase tariff blocks for larger customers to include depreciation.
    - Do the same to permit utilities a rate of return that would allow financing of infrastructure.
- A national policy needs to be established for financing new capital infrastructure that will require:
  - New laws permitting debt and equity financing of infrastructure by domestic and international public and private institutions.
  - New agencies to channel funds to appropriate utility recipients of the funds.
- As tariff decision making is likely to continue to be highly centralized, committees of operating companies need to be established to develop tariff solutions geared to particular operating company conditions:
  - Small companies
  - Large companies
  - Water & wastewater companies
  - Wastewater companies
  - Companies in remote areas having higher operating costs

Tariff decisions must and foremost address the very low wastewater surcharges, which contribute only 15% of the actual cost of transporting, treating and disposing of wastewater.

- Private Sector Participation
  - Greater private sector involvement is needed to:
    - Finance new plant and equipment especially wastewater projects.
    - Provide highly skilled services not readily available in a water utility.
      - GIS/IT.
      - Hydraulic analysis.
      - Master planning and design of new facilities and networks.
    - Provide financial and management consultancy services to assist company management in meeting the new challenges they will face.
- The Egyptian Water Regulatory Authority (EWRA) needs to be established to address the above issues (tariff, capital investment and PSP).
- Develop personnel systems that permit greater staffs mobility.
  - Allow for early retirement to assist utilities in dealing with surplus staffing.
  - Develop a system of allowances to enable shifting of key management and technical staffs among and within operating companies. Within operating companies, develop a system of allowances that would permit moving key staffs from one branch to another.
  - Pay staffs on unit rates whenever production can be measured accurately; examples include meter readers, collectors, meter reader & collector supervisors, and staffs responsible for meter installation, repair, and replacement.
  - Encourage use of highly skilled external consultants to fill upper level management and technical positions. Moreover, train junior management to move into higher-level positions.
  - Develop a career development program financed out of operating company surpluses that includes the provision of training to enhance skills and opportunities for higher-level education for key technical and managerial staffs.
  - Continue and expand in-house training programs using budget surpluses to finance some of associated costs.
  - Develop certification for various levels of plant operators that will be used to set operational standards for plant operators and serve as a mechanism for promoting top performers.

In addition to the above recommendations summarized in Box 4.1, there is need for the Holding Company and the 14 affiliated companies to conduct a national public awareness campaign to bring their message to their customers. Moreover, the relationship between the holding company and the affiliated companies needs to be streamlined. The holding company is expected to play a broader role in financial intermediation to channel mainly capital funds to necessary projects.

Box 4.1: Highlights of General Recommendations

Highlights of General Recommendations:

- Develop a **long-term financing plan** for new infrastructure that would attract public and private sector finance.
- Establish a **national policy** for financing new capital infrastructures.
- Activate **committees** for operating companies to develop tariff solutions geared to particular operating company conditions.
- Enhance and encourage **Private Sector Participation** (PSP) in financing, providing high-level services not available in utilities and planning and management consultancy.
- Establish the **Egyptian Water Regulatory Authority** (EWRA) to address tariff, capital investment and PSP related issues.
- Develop **personnel systems** that permit greater staff mobility and achieve optimum staffing levels.

4.3 SPECIFIC RECOMMENDATIONS

Specific recommendations complement the general recommendations presented in Section 4.2 above. They are different from the general recommendations as they can be directly adopted by MEUIS water companies and do not require major inputs from various GOE agencies.

Most of the specific recommendations presented by PADCO in this section aim directly at achieving the following:

- Complete action plans and tasks implemented by the water companies and the project.
- Capitalize on successes achieved to date and continue to enhance successful programs.
- Ensure sustainability and growth.
- Assist Water Companies in meeting some of the challenges discussed in Section 4.1 above.

Although MEUIS water companies are classified as top performers amongst the 14 affiliated companies and have already met the strategic objectives set forth in the grant agreement, there are several specific recommendations that need to be adopted by the water companies in the following core functional areas:

- Planning and policies
- Technical
- Financial and commercial
- Human recourses

Following are PADCO's recommendations in these four core areas.

4.3.1 Planning and Policies

The MEUIS Water Companies in collaboration with the institutional and CMC contractors developed corporate plans and infrastructure master plans. These plans are fundamental tools for preparing future actions plans for these companies. With respect to planning and policies, the following actions are recommended.

a) Corporate Planning

- **Update corporate plans prepared in 2002**

Corporate plans' mission statements, strategic objectives and intermediate results will have to be reviewed to reflect the status of the newly formed companies. For example as autonomous water companies, the cost recovery Strategic Objectives should be modified from achieving only O&M cost recovery to achieve full cost recovery. This will have an impact on intermediate results and

will require modifications and/or deletion or addition of the current 40 program plans included in the corporate plan.

Policies will also have to be reviewed and modified to reflect new by-laws and regulations prepared in accordance with Presidential Decree 135/2004 and Law 203/1991.

- **Ensure Sustainability of Monitoring and Evaluation System**
  - Conduct senior management monthly progress meetings.
  - Prepare quarterly management reports and conduct quarterly management review meetings as usual.
  - Enhance the MIS section. The newly established MIS sections need to be strengthened and supported by the chairmen and senior management as follows:
    - Appoint full time MIS manager in Fayoum and Minia.
    - Appoint additional MIS staffs in Fayoum.
    - Ensure regular flow of information from various departments to MIS, and the production of monthly, quarterly, biannual and annual reports.
- **Strengthen Planning and Economic Analysis Department**

  Appoint required staffs in accordance with new organizational structure and train staffs to perform tasks included in new regulations
- **Strengthen IT Department**

The IT department includes MIS, GIS and computer applications. The IT manager reports directly to the chairman.

  - Appoint a competent IT manager in Minia
  - Ensure full cooperation and coordination between the MIS, GIS and computer applications sections to produce timely reports, and sustain and maintain the huge investments made in the past few years in hardware, software and networks.

b) Master Planning

Harza prepared water and wastewater mater plans in 2000. USAID has already implemented some of the master plans' recommendations. PADCO has provided training to projects departments' staffs in master planning. Harza's master plans were translated and used as case studies in training project departments' staffs. The master plan presented information on existing conditions and made solid recommendations (schedule and budget) to service MEUIS population by W/WW services over the next 20 years.

The following are the recommendations in this area:

- Ensure master plans are protected and copies are kept in the project department and library.

- The project department should summarize findings of master plan and use master plan to prepare annual and 5 year capital investment projects.
- Utilize the services of qualified consultant to update the master plan every 3-5 years.

Box 4.2 summarizes recommendations concerning planning and policies.

Box 4.2: Highlights of Planning and Policies Recommendations

Highlights of Planning and Policies Recommendations:

- Update **corporate plans** prepared in 2002 and review corporate plans' mission statements, strategic objectives and intermediate results on a regular basis.
- Ensure Sustainability of **Monitoring and Evaluation System** through meetings, quarterly management reports and enhancement of MIS section.
- Strengthen **Planning and Economic Analysis Department**
- Strengthen **IT Department**
- Summarize **findings of Master Plan** and use master plan to prepare annual and 5 year capital investment projects.
- Utilize the **services of qualified consultant** to update the master plan each 5 years.

4.3.2 Technical

The technical area covers the main activities of the Water Company including production and distribution of water, collection, treatment and disposal of wastewater. As discussed in Chapter 3, major achievements were realized in the various water and wastewater programs. However, several areas need to be considered as recommended below.

a) Operation and Maintenance (O&M)

MEUIS water companies are operating and maintaining several hundreds of thousands of kilometers of water and wastewater networks, large numbers of filtration plants, compact units, slow sand filters, water wells, sewage pumping stations, sewerage treatment plans, and large fleets of evacuation and maintenance trucks.

Water Companies developed several programs such as SOJP, PM, troubleshooting, etc. Recommendations in this area include the following;

- Ensure newly installed flow meters are functional, well-maintained and accurate records and reports are regularly produced.
- Enforce and implement SOP, PM and troubleshooting. In various locations, systems have been developed but are not yet enforced.
- Ensure realistic O&M budgets are prepared for current and future facilities, and allocate sufficient funds for maintenance.
- Water and Wastewater Sector Managers must provide independent inspection, monitoring and evaluation of all facilities. Inspection reports findings should be presented to management for action.
- Along with the Holding Company and NOPWASD, develop solid plan to complete new facilities under construction.
- Update maintenance plans for water and wastewater networks. Coordinate with project departments to record all new facilities “As Built Drawings” for use in updating plans.
- Sustain sewer-cleaning programs and ensure maintenance of cleaning equipment.
- Outsource septic tank evacuations to the private sector and NGOs using the Beni Suef experience as a model.

b) Quality Assurance/Quality Control (QA/QC)

Branch laboratories at water plants have been recently refurbished and new central labs have been established. More than 97% of samples taken meet the standard set by the GOE. Recommendations in this area include the following:

- Provide summary of QA/QC daily and monthly results to management to respond to customers and media claims of unsafe water.

- Expand testing programs to add new tests that can now be conducted by the new central labs such as heavy metals and organics.
- Ensure sustainability of QA/QC programs by taking the following actions:
  - Allocate budget for consumables.
  - Provide maintenance contract for central lab equipment after warranty expires.
  - Enforce plan to utilize mobile labs more efficiently.
  - Appoint and train more qualified staffs in the laboratory.

c) Water Loss Reduction (WLR)

The water loss reduction program, implemented by the utilities, is one of the most critical and important programs, impacting the financial health of the companies.

MEUIS Water Companies have achieved remarkable progress in reducing water losses (UFW). Over the course of the project, UFW has been reduced from approximately 65% to 39%.

Water loss reduction teams have been formed and trained and equipment has been provided by USAID direct procurement and FARA program. Accuracy of UFW reporting is expected to improve by the new equipment procured recently, such as bulk meters, handheld units and residential meters.

The following are the recommendations for this important program.

- Complete all zones that are not covered in the plan. Expand plan to cover rural areas.
- Enhance Water Loss Reduction units by expanding units to cover all districts of the utilities. Train additional staffs to make use of new equipment procured by the project and through FARA.
- Update plan by setting a new target. It is recommended to reduce UFW to 30% by the year 2010. Based on the updated plan, reallocate resources and personnel to achieve target.
- Maintain the 250 newly installed bulk meters through a special maintenance program or a maintenance contract. Ensure bulk meters are read and regular reports produced.
- Coordinate closely with revenue department and ensure consistency of reporting UFW. Ensure that all large customers are metered.

d) Geographical Information System (GIS)

Progress has been achieved in mapping and GIS activities. Fayoum has received support in this area from the Dutch Project, while Beni Suef has had input from the Finnish Project. The project continued technical support to Fayoum and Beni Suef by updating software and assisting in correcting network maps. Minia has recently established a GIS section and produced GIS maps for most of its urban areas. Following are recommendations for this area:

- Ensure Sustainability of GIS Sections by taking the following actions:
  - Appoint a GIS manager in Minia
  - Provide maintenance contracts for software including upgrades.
  - Purchase additional licenses as needed.
  - Provide additional training for new staffs.
  - Equip section with GPS units.
  - Have access to firms specialized in digitization and surveying to update maps at standard rates.
  - Allocate sufficient resources from the annual budget to cover all above costs.
- Ensure all "As Built Drawings" are stored by the GIS section before handover of new network projects.

e) Project Management

Projects department staffs in the utilities have received comprehensive training in project management covering master planning, design management, tendering and contracting, construction management and supervision, and handing over of new projects. However, since most of the large projects have been managed by NOPWASD or donors' agencies, project departments are not yet completely qualified to handle large projects. Projects department need the following actions:

- Establish a good reference library with codes, standards, text books, equipment catalogues and design manuals.
- Appoint competent managers to lead projects departments.
- Update master plans periodically (see Item 3.4.1 above).
- Archive all "As Built Drawings" (in addition to GIS recording of networks).
- Provide continuous training to staffs.
- Develop database for all consultants and contractors and prepare contract documents.
- Outsource design and construction of large projects to qualified consultants and contractors.

f) Fleet Management

MEUIS utilities have prepared a fleet management plan where vehicles and rolling stocks are classified into operating, repairable and those that need to be scraped. This plan includes a procurement plan for new vehicles, and a maintenance plan for repairable vehicles. To maintain the functional and effective operation of the utilities' fleet, the following actions are recommended:

- Appoint a manager in Beni Suef for vehicles and rolling stocks sections.
- Update fleet management plan and ensure implementation of plan elements.

- Allocate sufficient budget to procure new vehicles and spare parts.
- Outsource major repair and overhauls through annual maintenance contracts with reputable workshops.

Box 4.3 includes a summary of major recommendations concerning the utilities' technical area.

Box 4.3: Highlights of Technical Recommendations

Recommendation Highlights of the Technical Area:

Operation & Maintenance

- Ensure newly installed **flow meters** are functional and well maintained, and accurate records and reports are regularly produced.
- Enforce and implement **SOP, PM and troubleshooting,** and update maintenance plans for water and wastewater networks
- Ensure realistic **O&M budgets** are prepared for current and future facilities and allocate sufficient funds for maintenance.
- Develop solid plan for **handing over** of new facilities.
- Sustain **sewer cleaning programs** and ensure maintenance of cleaning equipment.
- Outsource **septic tank evacuation** to the private sector and NGOs.

Quality Assurance/Quality Control

- Provide **summary of QA/QC** daily and monthly results to management.
- Expand **testing programs** to add new heavy metals and organic tests.
- Allocate **sufficient funds** for consumables.
- Provide **maintenance contract** for central lab equipment after warranty expires.
- Appoint and train **additional lab staff**.

Water Loss Reduction

- Complete **all zones**, expand plan to cover rural areas, and update plan by setting new targets.
- Enhance **Water Loss Reduction units** by expanding units to cover all districts of the utilities and train additional staff.
- Maintain newly installed bulk meters through a **special maintenance program** or **maintenance contracts**.

Geographical Information System

- Ensure **Sustainability of GIS Sections** through qualified managers, maintenance contracts, additional training and sufficient budget.
- Ensure all "**As Built Drawings**" of networks are recorded by GIS section before handover of new projects.

Project Management

- Establish a **good reference library** with all required data.
- Appoint **competent managers** to lead projects departments, and provide continuous **training** to staff.
- Update **master plans** periodically.
- Develop **database** for all consultants and contractors.
- Outsource **design and construction** of large projects to qualified consultants and contractors.
- Maintain **As Built Drawings.**

Fleet Management

- Appoint **managers** for vehicles and rolling stocks sections.
- Update **fleet management plan** and ensure implementation.
- Allocate **sufficient budget** to procure new vehicles and spare parts.
- Outsource **major repair and overhauls** through annual maintenance contracts with reputable workshops.

4.3.3 Financial and Commercial

Financial and commercial activities in the three utilities have witnessed tremendous progress and now resemble those of autonomous private firms. Financial statements (profit and loss) are produced regularly; performance based budgets are prepared annually, balance sheets are produced regularly; cost centers' cost accounting are established and functional; and assets have been valuated and regularly updated. All financial and commercial functions are computerized using "state of the art" software and hardware systems. Customer services including computerized databases have been established in all urban areas of the utilities. Business processes have been adopted and public awareness and customer education functions are regularly implemented.

Despite tremendous progress in theses vital areas, MEUIS utilities need to adopt the following recommendations to sustain this progress:

a) Finance

- Establish separate budgeting section in Fayoum and Minia similar to that in Beni Suef. Ensure trained and qualified staffs are assigned to budgeting section. Senior management should ensure smooth flow of information from other departments to this section to prepare performance based annual budget.
- Ensure that the prepared annual budgets (once approved) are distributed to all sector managers. Each sector managers should monitor the budget closely and produce a variance report with justifications and recommendations for corrective measures. The budget section should update and monitor budget continuously.
- Restructure finance department to ensure that all new functions are covered by new organizational structures, by-laws, and regulations (finance, management, cost accounting, asset management, cash management, auditing, etc.), and that finance and commercial managers develop/acquire the qualifications necessary to lead the financial functions of autonomous/commercial water companies.
- Ensure newly established International Accounting System (IAS) system is complete and functional and that all staffs are trained to use IAS committee.
- Utilize the recently developed five-year financial plan to develop various scenarios to fill the gap expected between revenue and cost, taking into account the tariff structure.

b) Commercial and Customer Affairs

- Ensure all customer service centers (CSCs) are implementing all business processes vigorously and revenue and collection reports are produced on time.
- Enforce installment payment in Minia and Beni Suef similar to Fayoum.
- In Minia, establish additional collection offices in Edwa, Dier Mowas and Mataii.
- Employ meter readers and collectors based on unit rates to replace inefficient collectors and readers.

- Develop and implement maintenance contracts for hand held units (HHUs) before warranty expires.
- Cover all large customers with meters. Develop a plan to equip large meters with remote reading system and use digital meters with automatic remote measurements (AMR) for new installations.
- For all new and replaced individual residential meters use ½ inch meters whenever applicable instead of the ¾ inch meters to improve accuracy and reduce cost.
- Adopt the following actions to improve revenue and collections:
  - Upgrade and enforce polices that will improve collection of bills, arrears, and services (installment, warning and notifications, disconnection of non-payers, W/WW police).
  - Review and update the minimum charge policies by continuously monitoring consumption patterns.
  - Switch to monthly billing for large customers when appropriate.
- Ensure that public awareness (PA) and customer education are sustained by implementing the following:
  - Institutionalize PA unit
  - Continue development and implementation of annual PA work plans
  - Keep regular contact with customers by updating messages (campaigns, printing and promotional materials (brochures, flyers etc.), maintaining media coverage (radio, TV, newspapers), and involving community leaders.
  - Coordinate with other companies and the holding company to develop a national campaign.
  - Archive and disseminate documentations (documentary films, TV/radio interviews, tapes or seminars, workshop and visits).
  - Conduct annual appraisal of the impact of PA activities and reflect findings in annual work plans.

c) Computerization of Financial and Commercial Functions

It is vital for the MEUIS utilities to maintain, as well as upgrade, computerized functions that have been established over the last 3-4 years, specifically the computerized revenue system (EDAMS) and the computerized Oracle financial management system. The following actions are recommended:

- Use the recommended guidelines to determine the steps necessary after termination of the first year's IT support and maintenance contract, namely to whether to extend support and maintenance contracts or not.
- Install ISDN lines to facilitate data exchange between headquarters (HQ) and branches and remote access support from company HQ or S/W contractor premises.

- Form a permanent IT committee from the three companies to meet every month to exchange information on S/W problems and contractors performance.
- Use proposed problem logs to register H/W & S/W problems.
- Monitor IT contractors' performance using the proposed form.
- Use proposed issue resolution log to facilitate issue handling before forwarding to the contractor.
- Increase the base of IT staffs in the companies by training junior staffs and transferring additional staffs to IT departments. Deliver continuous training to IT new personnel in the following areas:
  - Network Administration (LAN & WAN).
  - Introduction to Oracle SQL.
  - Advanced SQL.
  - Oracle Architecture and Administration.
  - Oracle Backup and Recovery.
  - Oracle Network Administration.
  - EDAMS Data Base Structure (Supported Version), Crystal Report Design (introduction & advanced).

Box 4.4 summarizes the recommendations necessary to sustain financial and commercial activities.

Box 4.4: Highlights of Financial and Commercial Recommendations

Highlights of Financial and Commercial Recommendations:

- Establish **separate budgeting committee** in Fayoum and Minia similar to that in Beni Suef with qualified staff and ensure flow of information.
- **Restructure finance department** to ensure all new functions are covered.
- Ensure that newly established **IAS system** is complete and functional.
- Utilize the recently developed **five-year financial plan** to prepare various scenarios to fill the gap between revenue and cost including tariff structure.
- Ensure all customer service centers are implementing all **business processes**.
- Enforce **installment payment** in Minia and Beni Suef similar to Fayoum.
- Establish **3 additional CSCs** in Minia.
- Employ **meter readers and collectors** based on unit rates to replace inefficient ones.
- Develop and implement **maintenance contracts** for hand held units (HHUs).
- Cover all **large customers** with meters.
- Use ½ **inch meters** for residential accounts whenever applicable instead of ¾ inch meters to improve accuracy and reduce cost.
- Improve **revenue and collections** by enforcing collection of arrears, updating minimum charge policies, and switching to monthly billing for large customers
- Ensure that **public awareness** (PA) and **customer education** are sustained by implementing the following:
  - **Institutionalize** PA unit
  - Continue development and implementation of **annual PA work plans** and develop a national campaign.
  - Keep regular **contact** with customers and update messages
  - Archive and disseminate **information**.
- Determine the **next steps** after the first year's **IT support and maintenance contract termination**.
- Install **ISDN Lines** to facilitate data exchange and remote access support.
- Form a **permanent IT committee** to exchange information on S/W problems and contractors performance.
- Use proposed issue **resolution log** to facilitate issue handling before forwarding to the vendors.
- Increase the base of **IT staff** in the three companies.

4.3.4. Human Resources (HR)

Several human resources management programs have been successfully implemented by the MEUIS utilities. These HR programs have greatly improved the utilities' performance, such as labor rationalization, staffs performance appraisal system, empowerment and delegation of authority, and computerization of payroll and personnel systems. However, given new by-laws and regulations, recommendations to sustain and improve HR functions. the newly established companies must adopt the following:

- Adopt new organizational structure and update functional descriptions.
- Update job descriptions based on new structures and new approved salary scale.
- Reclassify occupational groups based on actual company needs not in accordance with CAOA classifications.
- Adopt new salary scale based on the principle of job evaluation not in accordance with government grades.
- Capitalize on new laws, structures, and reclassifications to further rationalize manpower to reach acceptable and economic levels.
- Enforce personnel appraisal system, and develop and enforce a merit annual salary increase that is based on individual performance.
- Develop and implement career path to promote staffs based on satisfying certain criteria for each higher grade.
- Attract qualified personnel to fill in key positions that cannot be filled by the company's staffs even through training. Hire specialized consultants to perform specific tasks such as some IT functions, engineering and economic studies.
- Continue review and update of work procedures in all functional areas to simplify and improve efficiency of work methods, both internally and externally, according to an agreed upon plan. Each functional manager should be responsible for developing and implementing planned improvements.
- Ensure that a participatory approach (teamwork) is enforced through activation of at least monthly progress meetings in each department, and communicate minutes to senior management and other departments.
- Improve labor and management skills through enhancement of training department by taking the following actions:
  - Review and modify current training organizational structure approach to reflect the company's new organization.
  - Assess existing training staffs considering replacement and/or hiring of key staffs with higher qualifications.
  - Maintain training facilities and equipment by allocating annual budget for maintenance and new procurement.

- Approve and enforce training by-laws and agree on funds to meet realistic training needs.
- Activate the role of the company high committee for training (CHCT) as stated in the by-laws.
- Encourage on-the-job training (OJT), hands-on and practical training, and experience sharing visits by utilizing available resources (trainers, training facilities, W/WW facilities, etc.) at the company and holding company (Other sister companies) levels.
- Develop annual training plan and budget based on Training Needs Assessment (TNA).
- Ensure and secure sufficient and equal training opportunities that focus on career development, critical skills, middle management and supervisory levels.
- Assess training impact on the performance of individuals, and the company as a whole.

Box 4.5 highlights the important recommendations in the area of human resources.

Box 4.5: Highlights of Human Resources Recommendations

Highlights of Human Resources Recommendations:

- Adopt new **organizational structure** and update functional **descriptions**.
- Update **job descriptions** based on new structures and new approved salary scale.
- Reclassify **occupational groups** based on actual needs of the companies.
- Capitalize on new laws, structures, and reclassifications to further **rationalize manpower** to reach acceptable and economic levels.
- Enforce the **personnel appraisal system**, develop, and enforce a merit annual salary increase based on performance.
- Develop and implement **career path** to promote staff based on certain criteria.
- Attract **qualified personnel** to fill in key positions that are not available within the company and hire specialized consultants to perform specific tasks.
- Continue review and update of work procedures in all functional areas
- Ensure that a participatory approach (**team work**) is enforced through activation of progress meeting in each area and communicate minutes to high levels.
- Improve **labor and management skills** through enhancement of training departments.

ANNEXES

أكبر حملة قومية لاسترداد ١٠٠ مليون جنيه لهيئة المياه

كتبت عبير صلاح الدين:

في سابقة تعد الأولى من نوعها تستعد محافظة المنيا للترتيب لأكبر حملة لترشيد استهلاك المياه والحد من الفاقد في الاستخدام وسداد فواتير المياه المستحقة على الكثير من الجهات والتي تصل إلى آلاف الجنيهات سنويا.

تبدأ الحملة كما يؤكد اللواء حسن حميدة محافظ المنيا من ١٣ - ١٨ سبتمبر القادم بالتعاون مع مشروع الدعم المؤسسي لشمال الصعيد «بادكو» والقيادات الشعبية والمحلية وأعضاء المجلس القومي للمرأة بالمحافظة وبمساعدة سيارات ستجوب مراكز المحافظة التسعة مزودة بميكروفونات ومطبوعات لتوعية المواطنين بأهمية ترشيد استهلاك المياه، ودفع المستحقات المالية للهيئة العامة الاقتصادية لمياه الشرب والصرف الصحي بالمنيا، حتى تتمكن من القيام بتوصيل المياه لكل القرى والنجوع بالمحافظة، حيث وصل الفاقد في المياه إلى ٤٨٪ من إنتاج الماء وهذه معدلات كبيرة بالمقارنة بالمعدلات العالمية التي لا تتعدى من ١٥ - ٢٠٪ فقط.

ويوضح المهندس محمود أبوزيد رئيس الهيئة أن قيمة تخفيض الفاقد السنوي من المياه إلى النصف توازي قيمة إنشاء محطة مياه جديدة تكلفتها ١٠٠ مليون جنيه، ويذهب أكثر هذا الفاقد في رش الشوارع وري الحدائق، كما تنسب العدادات المتهالكة وطرق المحاسبة اليدوية، واستخدام بعض المصالح الحكومية بتغيير جميع العدادات التالفة ملايين الجنيهات على الهيئة، ولهذا قامت الهيئة بتغيير عدادات للمواقع التي لا توجد بها عدادات، بالإضافة لخطة للمصالح الحكومية وتركيب عدادات المنازل وتقسيط ثمنها على فاتورة المياه بحد أقصى ١٠ جنيهات شهريا.

من ناحية أخرى أشار اللواء حسن حميده إلى أنه أصدر قرارا بتخصيص موظف في كل مصلحة حكومية وكذلك المدارس والمستشفيات لمباشرة أعمال صيانة السباكة والعدادات ومتابعة استهلاك المياه، وتكليف عدد من شباب الخريجين للمساهمة في محو أمية أهالي القرى التي ينتمون إليها لارتباط مشكلة الأمية بالوعي في ترشيد استهلاك المياه، وسيعين كل شاب فورا بعد أن ينجح في محو أمية ٢٥ شخصا. يذكر أن التكلفة الفعلية لإنتاج المتر المكعب من المياه هي ٩٠ قرشا ويدفع المشترك ٢٣ قرشا.

حسن حميدة

ANNEXES

ANNEX 1: RESULTS OF FINAL MONITORING AND EVALUATION PLAN

INDICATOR	No.	UNITS	Before the Project			BASE LINE VALUE 29/4/2004			TARGET VALUE 30/6/2005			ACTUAL VALUE 31/12/2004		
			F	B	M	F	B	M	F	B	M	F	B	M
Water Production														
Water Coverage	1 / 1	%	NA	NA	NA	98	99	88	100	100	96	98	99	88
UFW	1 / 2	%	NA	NA	NA	39.5	35	39	35	33	35	39	35	38
Percent Of Accepted Samples	1 / 3	%	NA	NA	NA	97.6	97	97.7	98	99	98	97.6	97	97.2
Per Capita Consumption	1 / 4	Lpcd	NA	NA	NA	158	75*	85	170	85*	100	158	83*	85
Wastewater Production														
Wastewater Coverage	2 / 1	%	NA	NA	NA	25	8	14.4	25	12	20	25	10	14.4
Percent Of Accepted Wastewater Samples	2 / 2	%	NA	NA	NA	60	63	-	70	100	-	60	100	-

*** Per capita consumption is estimated to 120 L/PC for urban areas in Beni Suef**

F - FEGAWS
B - BEGAWS
M – MEGAWS

INDICATOR	No.	UNITS	Before the Project			BASE LINE VALUE 29/4/2004			TARGET VALUE 30/6/2005			ACTUAL VALUE 31/3/2005 (11 Months)		
			F	B	M	F	B	M	F	B	M	F	B	M
Finance														
Cost of 1 m3 Water sold	3 / 1	PT	NA	NA	NA	37	46	40	34	44	32	35	41	35
Cost of 1 m3 Wastewater treated	3 / 2	PT	NA	NA	NA	40	55	48	40	51	40	40	49	54
Total Revenue	3 / 3	Mln. LE	NA	NA	NA	33.4	26	31.7	35	30	35	36	32.2	36.4
Total Collection	3 / 4	Mln. LE	NA	NA	NA	33.4	26.5	31.7	35	29	35	37	27.5	34
Percent of revenue to Collection	3 / 5	%	79	91	63	100	102	100	100	97	100	115	87	91
Cost Recovery	3 / 6	%	45	38	44	106.7	92	80	106	105	100	95	125	88

NB: All financial data (actual values) represent the period from 1/5/2004 to 31/3/2005 (11 months).

INDICATOR	No.	UNITS	Before the project			BASE LINE VALUE 29/4/2004			TARGET VALUE 30/6/2005			ACTUAL VALUE 31/12/2004		
			F	B	M	F	B	M	F	B	M	F	B	M
Customer Service														
Percent of metered connections	4 / 1	%	NA	NA	NA	98.8	98	99.9	99.5	100	99.9	98.8	98	99.9
Percent of working meters	4 / 2	%	NA	NA	NA	87.5	85	89	90	90	95	87.7	87	91
Organiztional														
Number of workers per thousand connections	5 / 1	Number	NA	NA	NA	6	8.7	8	5.5	7.5	7	6	7.1	7.6